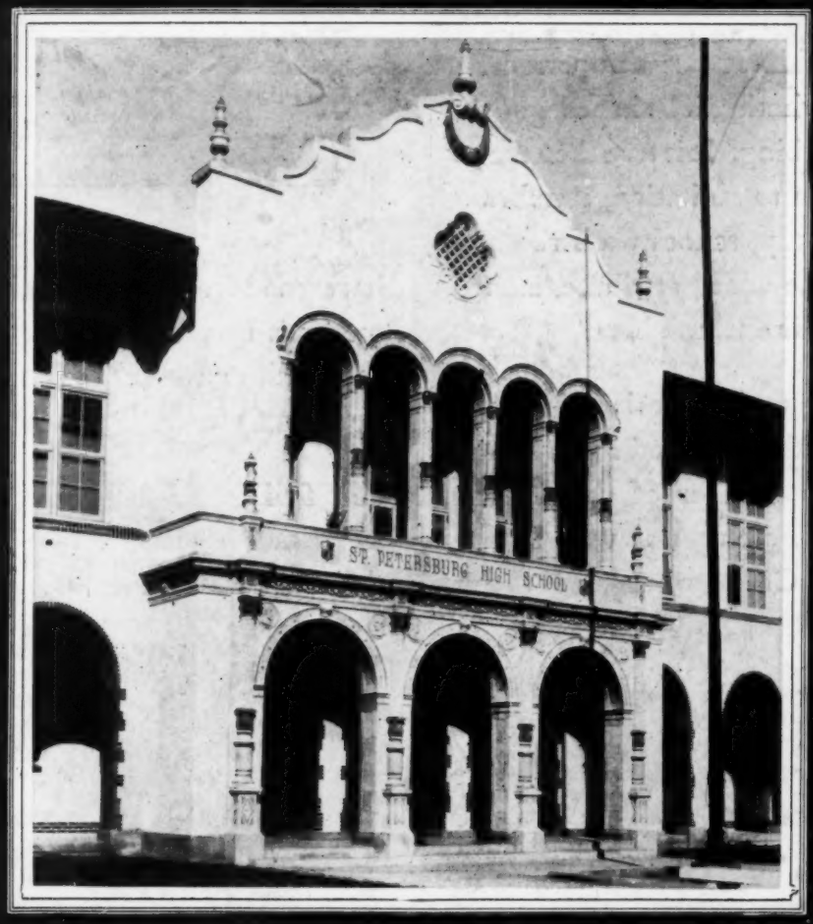
The NATION'S SCHOOLS

DEVOTED TO THE APPLICATION OF RESEARCH TO THE BUILDING, EQUIPMENT AND ADMINISTRATION OF SCHOOLS



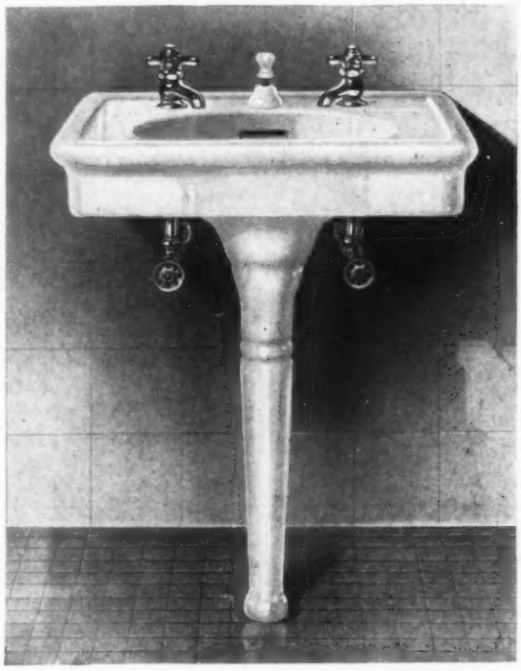
VOL. IV.
No. 2

AUGUST
1929

Published by THE NATION'S SCHOOLS PUBLISHING CO., *Chicago*

150 Pounds Pressure CRANE VALVES 2500 Pounds Pressure

School Children respond to a homelike atmosphere of Crane materials



Such fixtures as this IDALIA *lavatory, C 600-SA have been designed by Crane Co. to add a touch of cheerfulness to otherwise barren wash rooms. Its graceful contours serve to cloak sturdiness that will stand up under years of exacting use.*

Children fail to react to impersonal severity, whether it be in pedagogy or in plumbing. It is true then that in addition to sanitation, comfort, and economy, school wash rooms require one added attribute, a cheerful, homelike atmosphere.

Gathering their experience from designing bathrooms and fixtures for an impressive number of the country's homes . . . cottages as well as mansions . . . Crane plumbing experts have made careful investigations of methods by which monotony can be banished, and beauty added to cleanliness in fixtures.

The findings of these men, like those of Crane engineers and piping experts, are at the service of school builders.

CRANE

GENERAL OFFICES: CRANE BUILDING, 836 S. MICHIGAN AVENUE, CHICAGO

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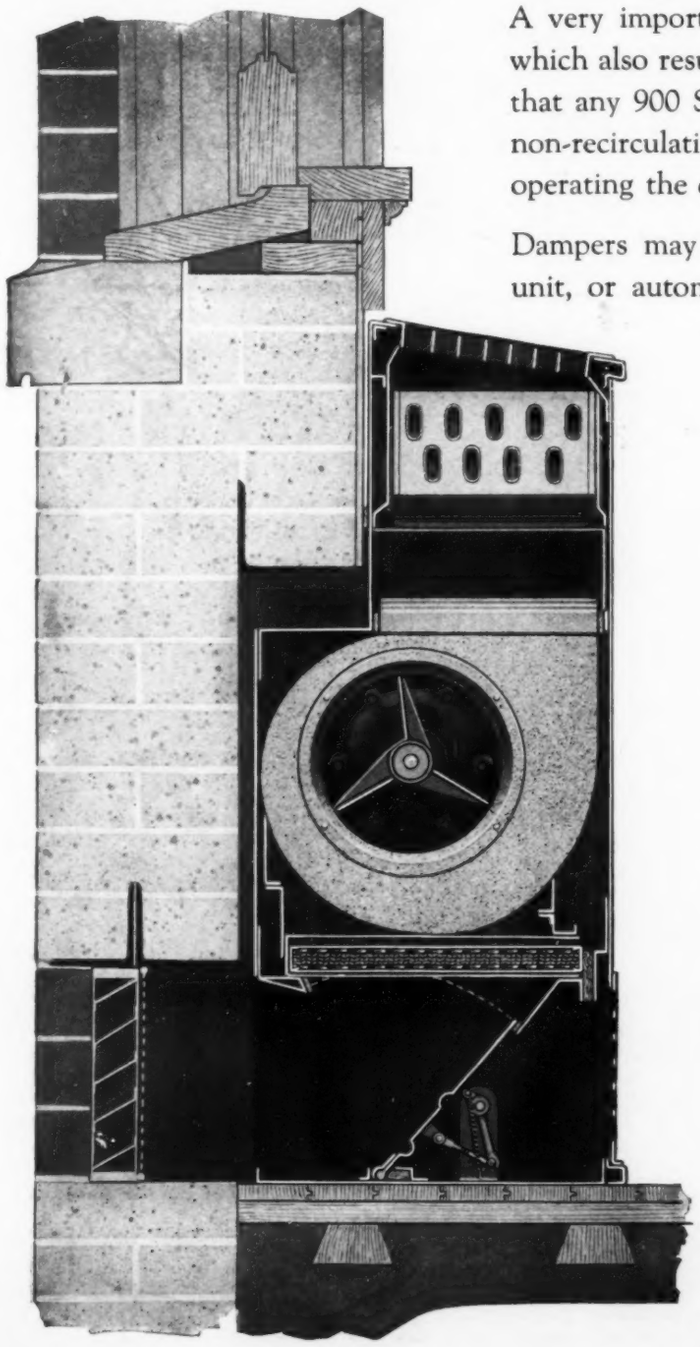
BUCKEYE Heatovent

The "900" Series Buckeye Heatovent

This cross section view gives a clear idea of the simplicity of design and sturdiness of construction of the 900 Series Unit which is the result of many years experience in designing and building heating and ventilating units for school rooms, offices, churches, laboratories and banking rooms.

While its handsome appearance and the accessibility to all parts are features to be considered, its real pre-eminence rests upon its outstandingly superior performance under severe conditions.



A very important feature, one which is very convenient and which also results in a very appreciable saving in fuel is the fact that any 900 Series Buckeye Heatovent can be changed from a non-recirculating to a recirculating unit and vice-versa by merely operating the combination intake and recirculation damper.

Dampers may be arranged to operate either manually at each unit, or automatically by any standard automatic temperature control system from remote control point.

Air Delivery: 600 to 1500 cu. feet per minute.

Height: Only 34 inches - - - - which permits installation under practically any window without cutting off light.

Depth: Only 9½ inches when recessed - - less aisle projection than the average 3 column iron radiator.

Width: 26 to 60 inches, varying with capacity.

Write for Bulletin Number 124

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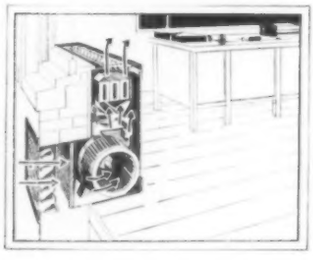
These young folk deserve clean, pure air in their classrooms

. . . without drafts !



AIR is plentiful but not always pure. Raw, outdoor air can be let into a classroom without much trouble. But the *quantity* of air and the ease of obtaining it is no more important than the *quality, temperature* and *control* of it! Drafts are as dangerous as measles!

A Sturtevant Unit Heater-Ventilator in each classroom will bring outdoor air indoors, filter it clean; warm it to precisely the right temperature; supply it in the right quantity . . . without a hint of draft . . . noiselessly!

Actual photographs of Unit Heater-Ventilator installations in schools, old and new, are found in our new U.V. Catalog number 361. It will be a pleasure to send you a copy on request—no obligation of course!

B. F. STURTEVANT COMPANY

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SUPPLIES OUTDOOR AIR FILTERED CLEAN AND TEMPERED

CONTENTS

Volume IV **August, 1929** Number 2

(Continued on page 4)

Published on the fifteenth of each month by

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CONTENTS FOR AUGUST, 1929

EDITORIALS

UNIVENT and Glass—*make the difference*

THE UNIVENT is a complete individual ventilating machine for drawing fresh air directly from out of doors — cleaning it — warming it to a comfortable temperature — and delivering it in such a manner that there is an agreeable air motion but without drafts.

Univent results cannot be duplicated by any other unit ventilator—because the Univent's important features are exclusive to itself.

School children everywhere are receiving the benefits of Univent Ventilation—ventilation that means better health, better attendance records — more alert minds.

If you are considering a new building, or plan remodeling a present building, learn the facts regarding the Univent, which is endorsed by the leaders in architecture and school administration everywhere.

Our free book No. 21 will be gladly sent you upon request.

No other ventilator gives

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VENTILATION

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UTICA	PITTSBURGH	COLUMBUS	DES MOINES	BIRMINGHAM	KANSAS CITY	SPOKANE	WINNIPEG, MAN.

Index of Advertisers

THIS MONTH

The importance of considering the school plant as a complementary phase of the educational system is emphasized by Mr. Moehlman in the opening article this month.

How the continuation schools may provide the greatest help to pupils by giving vocational guidance is told by Mr. Kitson on page 25.

The application of psychiatric social service to the schools is described on page 35 by two members of the Los Angeles school staff.

Describing the construction of a grammar school in Glendale, Ariz., Mr. Smith advocates, on page 45, the unit plan of building.

Play for the many in contrast to athletic championships for the few is urged by Miss Trilling on page 51.

Security —

ABLY planned and engineered to withstand every test—including Time. Not measuring sturdiness and safety with dollars. Ten, — fifteen, — yes — twenty years hence today's Royal Movables shall seat tomorrow's children — properly.

THE ROYAL CHAIR
"A Lifetime Chair"

CORRECT POSTURE MEANS SADDLE SHAPED SEATS

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1138 So. Michigan Boulevard
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Points To Think Of!

Point 1—Heavy galvanized steel used exclusively. Tubular members sherardized inside and out. Hardware—handles and foot castings—solid white brass buffed bright.

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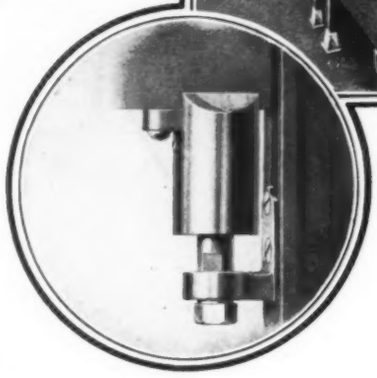
Point 4—A ball bearing gravity hinge that closes door. Will not get sluggish in action and won't wear out. Needs lubrication only once in several years.



These are some of the points that make Veneer-Steel Partitions superior

Complete details will be found in SWEET'S CATALOGUE, pages B2106 to 2115

The Hart & Hutchinson Co.

NEW BRITAIN, CONN.

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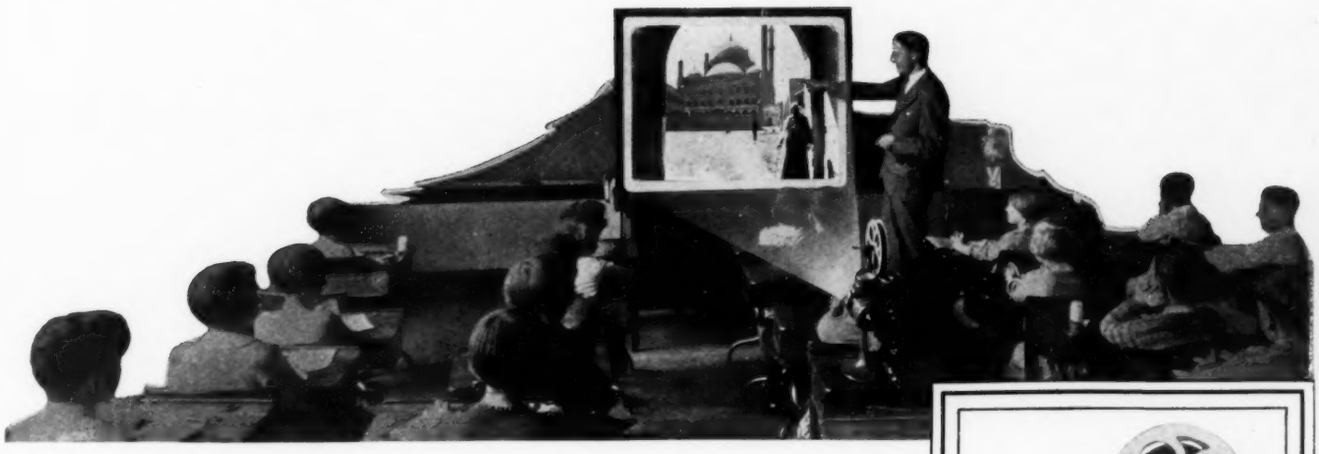
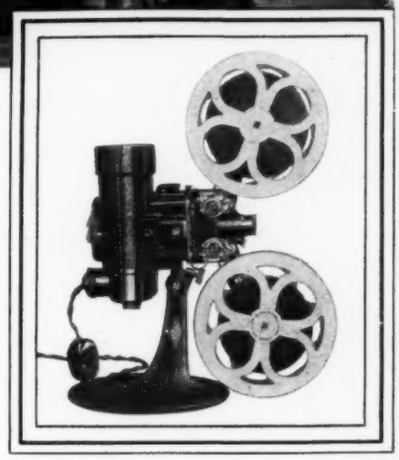
Veneer-Steel TRADE MARK REG.

Veneer-Steel Partitions





BELL & HOWELL *Filmo 57-E School Projector with 45-50 condenser, 250 watt, 5 ampere lamp, geared re-wind and safety shutter. Price, with case, $205. Other models from $190 up.*

Show Your Educational Movies with

FILMO
SCHOOL PROJECTOR

IN visual education, the mind moves along rapid paths. Sound is distracting. This is one of the reasons why the Filmo 57-E School Projector is preferred for motion pictures in the school room . . . its quiet operation.

The precise nine-to-one Filmo mechanical movement which moves the film over the projector aperture not only insures maximum quiet, but absolutely eliminates "flicker", the cause of eye-strain. The powerful Filmo lighting system projects the film with theater-clear brilliance, on full-sized screens in the small class room and assembly hall alike.

The teacher may stop Filmo 57-E for still projection of any desired scene in the film in order to discuss the subject matter with the class. There is absolutely no danger of blistering the film. The machine may be reversed while in motion for reverse analysis of any kind of action, and then started forward again without a break in the projection.

Setting up and threading the projector is but a couple of minutes work, and easily done. Its operation requires no special knowledge. Once started, the projector runs itself, requiring no further attention.

The whole range of the several arts and sciences is thoroughly covered in the educational films available for 16 mm. use. Write to us for information on renting or buying educational films, their sources of supply, and for the booklet "Filmo in Schools and Colleges."

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Please mail me your booklet "Filmo in Schools and Colleges," describing Bell & Howell equipment for school use.

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School.....

City..... *State*.....

Million Dollar Words

about 1,000,000 Toilet Seats

WHALE-BONE-ITE

LAMINATED

"Whale-bone-ite" has made possible a toilet seat strong enough to defy the slam-bang abuse of the public—to be guaranteed for the life of the building—to end immediately all replacement expense.

And without "Laminated" there would be no "Whale-bone-ite". "Laminated" wood is Nature improved by Science. Science secures immense strength with remarkable lightness.

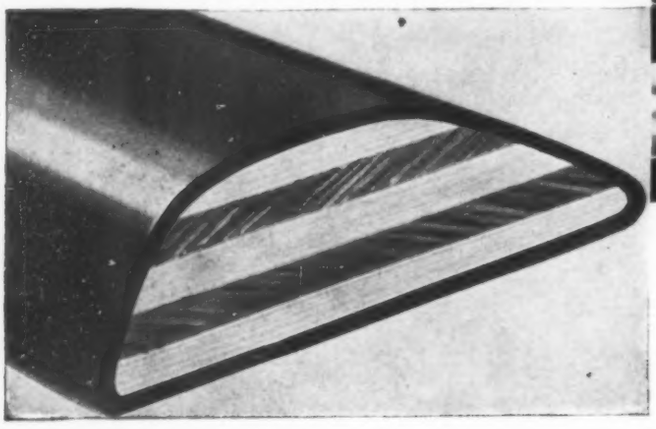
We and others have found it impossible to make a seat by any other method anywhere near as sanitary, as strong and as light. Fourteen years of service have proved its value. More than a million are in use. Those concerned with the design, construction and operation of buildings have found this experience safe to follow, so that today nearly all seats going into public toilets are of laminated construction.

The handsome polished Whale-bone-ite surface will last a life-time. It is easy to clean and non-inflammable.

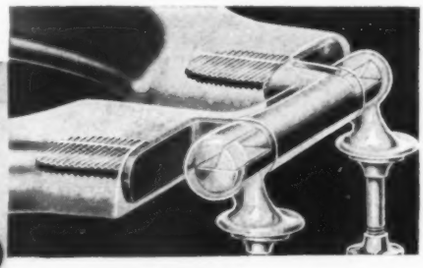
Whale-bone-ite Seats are found quite generally in the guest bathrooms of fine hotels as well as in public institutions where service requirements are severe. Many new apartment houses are equipping all toilets with them.

Send for free cross-section
— see its strength yourself

Figures show that on the average ordinary seats have to be replaced about every three years. If you want to end this needless expense, just as it already has been ended in more than a million public toilets in modern and remodelled buildings, simply install Whale-bone-ite Seats as fast as other seats wear out. Not only will the replacement expense end, but the toilets will be cleaner as Whale-bone-ite is easier to keep clean. Without obligation send for a free Whale-bone-ite cross-section. Simply address Dept. **G-6,** Seat Division, The Brunswick Balke-Collender Co., 623 South Wabash Ave., Chicago.



Note the Laminated Construction — a core of alternating-grain layers of hardwood — sealed and bonded to the whole by Whale-bone-ite. It is warp-proof and is guaranteed against warping, cracking and splitting.



The Whale-bone-ite steel hinge is moulded integral with the Seat forming an unbreakable unit. Covered with Whale-bone-ite, the hinge is as handsome as the Seat. It cannot tarnish. It is easy to clean.

Brunswick

WHALE-BONE-ITE

TOILET SEATS

THE BRUNSWICK-BALKE-COLLENDER CO. , Chicago

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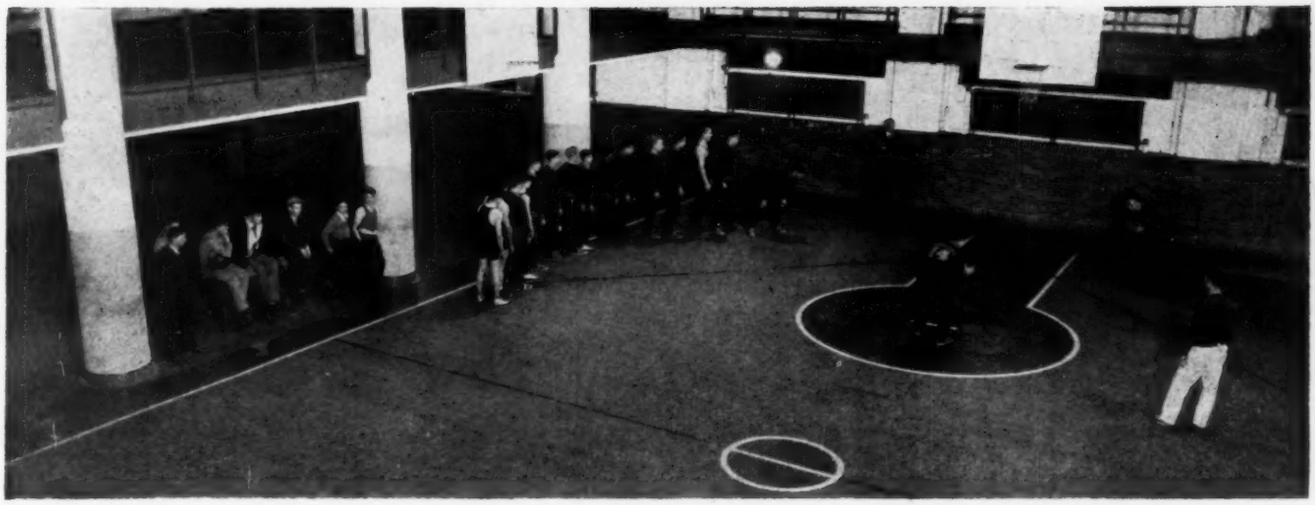
Charlotte	Denver	Los Angeles	New Orleans	San Francisco	Ottawa
Chattanooga	Des Moines	Memphis	New York	Seattle	Toronto
Sidney, Australia			Havana		Buenos Aires



MILWAUKEE'S FINEST SCHOOL INSTALLS BLOX-ON-END

The Central Continuation School, Milwaukee, is another of the finer type schools floored with Bloxonend. The architects, Van Ryn & De Gelleke, nationally known school specialists of that city, specified 12,000 sq. ft. of Bloxonend for the Boys' and Girls' Gymnasiums.

Bloxonend is being specified for gymnasiums and shops by nearly all leading school architects because it meets the requirements of the school official.

The hazard of splinters—ever present in ordinary wood flooring—is eliminated when Bloxonend is used. The tough end-grain forms the wearing surface. This flooring (2½ in. thick) is firm and fast, yet affords cushion-like resiliency. It is handsome, noiseless, lasts a life-time and stays smooth. Easily laid in old or new buildings. Write for free descriptive literature and sample.

CARTER BLOXONEND FLOORING CO.

Kansas City, Missouri

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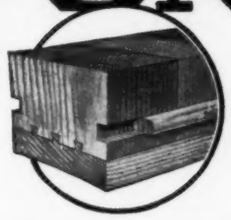
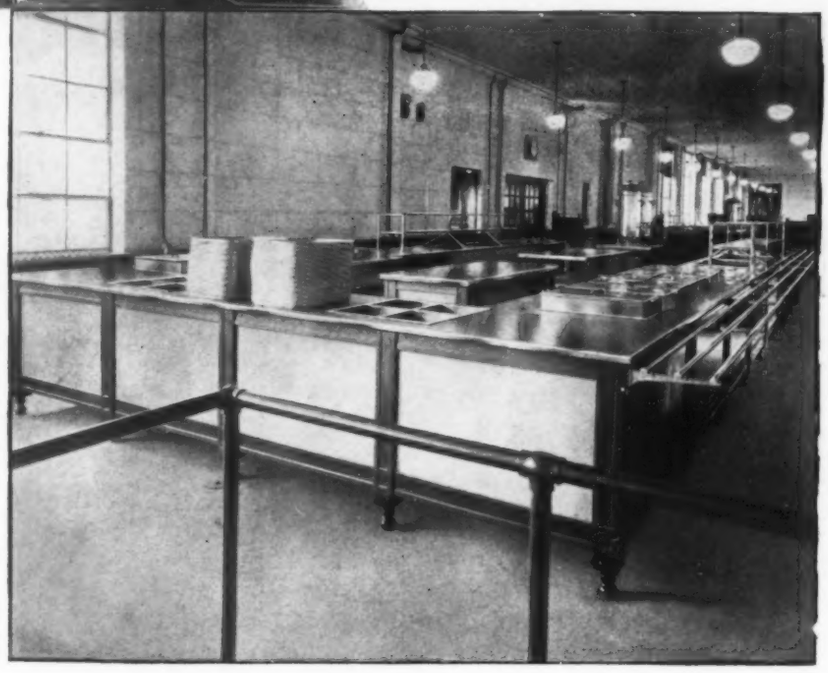
BLOX-ON-END FLOORING



Bloxonend is made of Southern Pine with the tough end grain up. It comes in 8 ft. lengths with the blocks dovetailed endwise onto baseboards

Lays Smooth
Stays Smooth

Cafeteria of Shortridge High School, Indianapolis, Ind., showing Monel Metal counter top, steam table insets, and silver boxes. Manufactured by LEWIS MFG. & SUPPLY CO., Louisville, Ky.



SHORTRIDGE HIGH SCHOOL
INDIANAPOLIS, INDIANA

. . . Where 3500 can be served *from sanitary Monel Metal* food service equipment!

THIS modern school cafeteria—in one of Indiana's largest and best equipped high schools—is designed to accommodate 3500 persons. At present 2700 are served daily from this cheerful, clean-looking Monel Metal equipment.

Foremost school feeding authorities recommend Monel Metal food service equipment because it affords a rare combination of service properties essential to proper cafeteria and restaurant management. Monel Metal is always bright, attractive, easily cleaned. It is rust-proof and corrosion-resistant. It is as strong as steel and defies the wear and abuse of long service. It has no coating to chip, crack or wear off.

Now is the time to discuss Monel Metal food service installations with your regular equipment manufacturer. Detailed information concerning Monel Metal equipment for school cafeterias and restaurants furnished on request. Just write for it

SEND FOR "LIST B" OF MONEL METAL AND NICKEL LITERATURE

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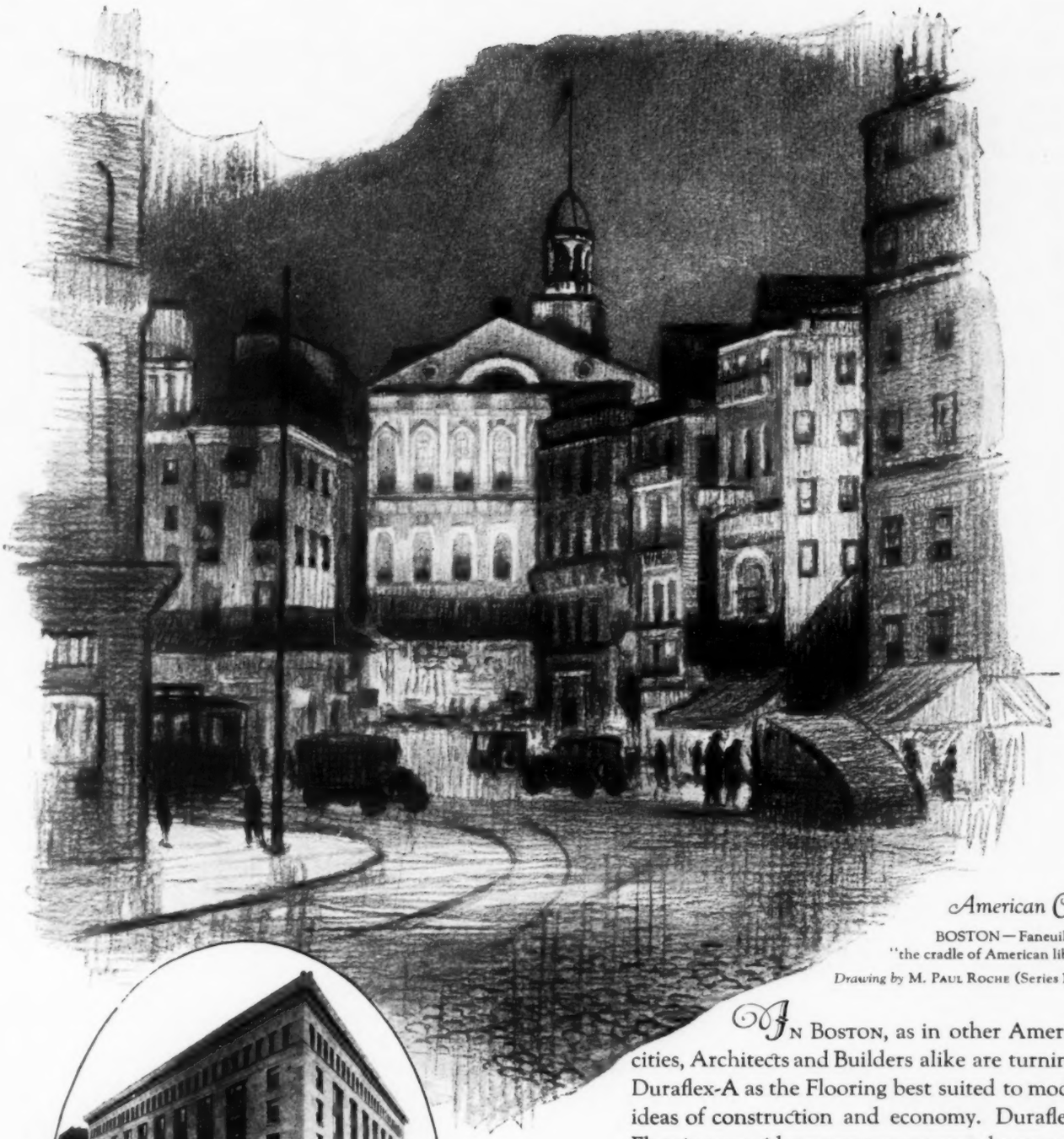
Monel Metal is a technically controlled Nickel-Copper alloy of high Nickel content. It is mined, smelted, refined, rolled and marketed solely by The International Nickel Company, Inc. The name "Monel Metal" is a registered trade mark.

INCO MONEL METAL

THE INTERNATIONAL NICKEL COMPANY, INC., 67 WALL STREET, NEW YORK, N. Y.



American Cities

BOSTON—Faneuil Hall
"the cradle of American liberty"
Drawing by M. PAUL ROCHE (Series No. 8)

In Boston—A recent Duraflex-A installation
INSURANCE EXCHANGE BUILDING
Coolidge and Shattuck, *Architects*
Geo. A. Fuller Co., *Builders*
220,000 square feet of Duraflex-A

IN BOSTON, as in other American cities, Architects and Builders alike are turning to Duraflex-A as the Flooring best suited to modern ideas of construction and economy. Duraflex-A Flooring provides a permanent, seamless wearing surface that can be maintained against wear and damage. It can be kept easily and economically in continuous perfect condition. Send for complete data and specifications.

THE DURAFLEX COMPANY, INC.
BALTIMORE, MARYLAND

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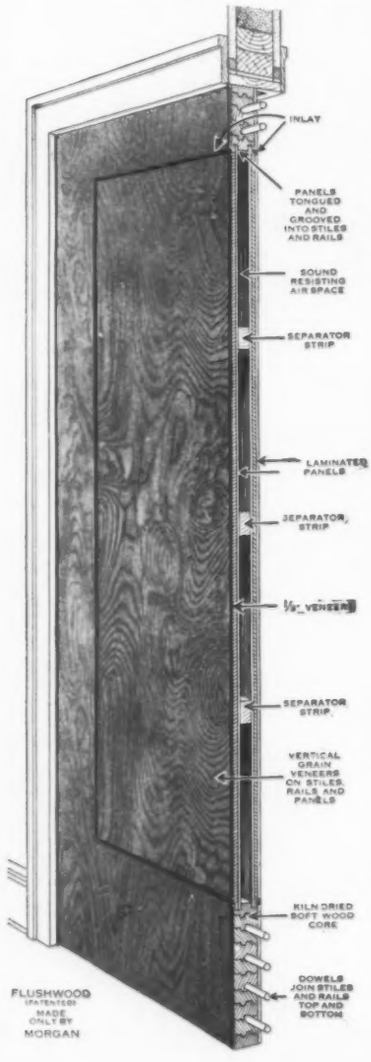
DURAFLEX-A FLOORING *and* DURAFLEX TILE

The IDEAL SCHOOL DOOR

FLUSHWOOD
(PATENTED)

Flushwood doors meet the exacting requirements of the modern school building. With their advanced features of design and construction they fill every need to complete satisfaction.

Architects and builders of schools recognize the merit of Flushwood through its performance in actual use.



Possibly you have never realized the importance of proper doors in your building. Then you should investigate Flushwood now. As you compare it point for point with the ordinary flush door, you will appreciate fully its superiority.

There is its resistance to sound (the proof of which is shown to the right); its beauty, the contrasting wood grains with a harmonizing inlay; its light weight and staunch construction. All these and many other features which go to make Flushwood the ideal school door.

A card to one of our nearest offices will bring complete information and an interesting catalog of Flushwood Doors.

MORGAN WOODWORK ORGANIZATION

MORGAN SASH and DOOR CO.
Chicago Detroit

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MORGAN MILLWORK CO.
Baltimore; Jersey City; Greensboro, N. C.; New Haven, Conn.; Wilmington, Del.

The Test That Proved FLUSHWOOD'S *Resistance to Sound*

Photo showing test of Flushwood Door sound resistance by Doctor Paul E. Sabine in sound chamber of Riverbank Laboratories, Geneva. Organ is operated by observer seated in wood cabinet. (This prevents absorption of sound by observer's clothing.) The time during which the sound remains audible is a measure of the intensity of sound in the sound chamber. (See below.)

Observer with stop watch chronometer, noting the time the sound from the sound chamber remains audible on the further side of the Flushwood door. The difference in the duration of audible sound with the observer—first in the sound chamber and then on the further side of the Flushwood door is a measure of the factor by which the sound intensity is reduced by the Flushwood Door.

The
NATION'S SCHOOLS
DEVOTED TO THE APPLICATION OF RESEARCH TO
THE BUILDING, EQUIPMENT AND ADMINISTRATION OF SCHOOLS

VOLUME IV AUGUST, 1929 NUMBER 2

Relating the School Plant to the Instructional Process

Modern educational organizations are too often inclined to consider the administration of equipment facilities as an activity entirely independent of the instructional process instead of as a complementary phase

By ARTHUR B. MOEHLMAN, Professor of Administration and Supervision, University of Michigan

EACH year vast sums of money are being spent in the United States for school sites, school buildings and the operation and repair of existing buildings.

The reasons for this condition are obvious. School buildings existing for fifty years or more wear out or become obsolescent educationally. The tremendous annual growth in school population and in public-school attendance requires new sites and new buildings, new equipment and supplies and careful attention to their upkeep. The annual expenditures for these purposes have also been accelerated by the World War, and still include to some extent the remains of the "catch-up" programs. Study of overcrowding and part-time sessions in numerous cities over the past ten-year period indicates that this factor is still a problem. The number of housings to be provided, the requirements for greater safety and the economic increase in construction costs have all contributed to the large amounts involved.

The campaigns required to obtain funds for these needs have resulted in focusing the public's attention rather sharply upon the school plant problem. Next to the general question of public-school finance there is no activity to-day in education that has received greater emphasis than the school plant problem.

One of the disturbing factors is the general detachment with which the school plant problem is considered both within and without the educational organization. There is relatively little thought of the school plant as a purely complementary activity to the instructional process. There is much emphasis upon the school plant as an apparently independent activity quite widely separated from its instructional aspects. There is much of so-called business and too little of education in the entire problem. In view of this situation it is timely to develop the school plant problem functionally so that its importance may be seen in its true light and not separate and distinct from its actual purpose.

Development of School Organization

The development of the present-day general concept of the school plant problem is easily traced. In the earlier days of school administration, before systems grew large and complicated, the board of education was a body that exercised almost complete legislative, executive and appraisal functions. Only a portion of the executive activity, teaching, was delegated gradually to the professional teacher. Even then the supervision of these early schools was under the direct control of laymen. The principal and the superintendent gradually evolved from this organization, as the need for them became apparent.

The development of these educational leaders, however, was purely on the instructional side.

The complementary and not directly instructional activities were retained by the lay board of education. With further increase in size these also became too complicated and time-consuming for the unpaid members to operate as an extra-work activity and the secretaryship, later expanded into the business managership, developed. The secretary, generally of the home talent type with social roots deeply implanted in community life, gradually increased his power at the expense of instruction, while the superintendent was generally an outsider and frequently officially short-lived. Gradually there developed a wide gap between so-called business and instructional activities, much to the detriment of the latter.

Lay Board Controlled Plant

Among the activities over which lay control prevailed was the school plant. The superintendent generally advised the board when he thought a building was needed. Without an objective technique or a basic school plant policy, these recommendations were sketchy and vague. After recommendation, the special board committee entrusted with this phase of the program determined the location, generally by wards or precincts, selected the architect, accepted his plans and either supervised his work directly or placed him under the secretary or the business manager. There was little or no educational planning.

Upon completion, the janitors and other employees were selected by board members from among personal or political friends. Their supervision was then entrusted either to a board of education committee or to the secretary or business manager. Equipment and supplies were under the control of a board committee or the secretary. Repairs in like mannner were determined by the board or one of its noninstructional employees. The special school engineer, who controls operation and maintenance, is a much more recent development.

Under this traditional alignment and method of administration the superintendent had little or nothing to do beyond indicating the need for a building. The principal had no control over operating forces after the building was in use. There were only two real points of contact with the instructional forces. The first was indication of need and the second was the use of the building after erection. If the building bore little or no relation to curricular needs, nothing could be done about it.

While this generalization describes the traditional development, conception and administration of the school plant program, the condition has not by any manner of means passed into the realm of shadowy tradition. Numerous examples, both in large and small centers, still exist where functionalization has not proceeded further than the traditional stage.

What should be the true relation of the school plant to the balance of the educational organization? What activities should be included under it? How should it be administered? What is its true purpose and its actual value with respect to instruction? These and numerous other questions might be asked by the inquiring educator and the progressive board of education member.

Before allocating a specific place in the educational sun to the school plant, it is necessary to analyze its basic purpose. The function of public education is the education of the individual so that he may live successfully under a democratic form of social organization. The formal instructional process depends for its facilitation and practice upon a number of activities that have no purpose in and of themselves but must be judged solely in terms of their contribution to the satisfaction of instructional needs. If we attempt to analyze these activities and group them in related fields the classification would be: instruction, child accounting, personnel, supplies and textbooks, administration, equipment, school plant, public relations, records, research, finance and appraisal. All of these activities involve the functional phases of planning, executing and appraising. They are carried on by means of agents and activity in terms of purpose. They may be judged immediately with respect to the efficiency of operation as an activity, or mechanically and ultimately in terms of their contribution to the facilitation of the instructional process.

Subordinate to General Purpose

Considered functionally, then, the school plant activity must be classed as a secondary problem. It is not intended to minimize its vital importance but merely to orient it properly with respect to other problems.

Since all educational activity must be thought of solely as a means to an end, the school plant cannot be considered apart from its basic purpose as a facilitating agent. This also gives the clew to its place in organization. Functionally, the school plant must be subordinate to the general purpose and must therefore be closely related to that purpose with respect to control. While the activity as a whole presents many problems particularly and peculiarly its own, these must be worked out in terms of the underlying philosophy of education of the community it is to serve. It should be under the control of the educational executive of the school district and should be admin-

istered in all of its subdivisions, whenever possible, by men trained in the field of education whose philosophy is sound and whose viewpoint is social. It cannot be considered purely as a job but rather as one of many contributing and facilitating agencies. It can be developed and operated successfully only insofar as it expresses basic purpose and philosophy and is itself a direct physical expression of educational policies and practices.

The major problems that may be logically classified under the division of the school plant are: operation, upkeep, new buildings and changes in existing buildings, and equipment. From one aspect operating employees and finance might also be included and they generally are in written discussion. Personnel and money appear in every activity. Functionally, however, these two fields should be considered as units by themselves in order to maintain uniformity in organization. When considered in relation to the school plant, only certain phases of these activities should be included and their relationship to the general field of problems and their control must not be forgotten. For purposes of our discussion the functional classification will be maintained.

Problems To Be Considered

The problems grouped under operation are those of using, administering, cleaning, heating and ventilating the physical plant. The degree of operating efficiency will depend upon the policies of the boards, the adequacy of means of procedure and the administration of such means.

The first group of problems are those related to use and administration. Use depends upon a series of factors among which may be included location, drawing power, safety, instructional adequacy and administrative skill in program making. Since by our definition the school plant must be considered as a facilitating agent, its administrative organization requires centralization of control of all operating agents in terms of instruction. This means that the principal must be the responsible head of the school and have authority over operating personnel. The attitude and quality of work should be judged from the standpoint of instructional needs. Technical supervision and inspection may be made periodically by the chief engineer or custodian but the administrative authority should rest with the instructional head.

Administratively, the personnel problem may be considered as the determination of need in terms of adequate standards, methods of selection and methods of securing efficient service. The development of standards of cleanliness, heating and ventilation must be determined through research carried on in terms of purpose. The chief problem in selection is to lead the board of education away from the traditional conception of considering operating service as a catch-all for friends and political workers of the precinct type.

The next problem is to develop physical, mental and social standards for these employees and to train them in their jobs. Training is a problem for specialists in this field and can be organized as can any other functional supervisory service. The vital importance of the operating employee is to secure efficient instructional conditions and to act as an agent in keeping the community informed with respect to the purpose, value, condition and needs of public education. This last activity generally is overlooked. Another problem in the administration of personnel is the need for close relationships and greater sympathy between the operating and instructional staffs. Progressive systems to-day recognize the value of such contacts and make provision for participation of operating employees in staff meetings.

Standards of cleanliness, individual work units and efficiency in heating and ventilation must be developed in terms of the age and condition of the plant and the type of heating and ventilating apparatus. These are technical problems that belong to the chief engineer or custodian. Once established, it is possible to develop them in such simple form that they can be administered by the principal. This sketchy survey of the field of administrative and operating problems indicates that the degree of efficiency with which they will be solved depends upon the character and quality of the administrative and the technical supervisory staff and the objectiveness with which the operating personnel are selected and administered.

Economy in Maintenance

The problem of upkeep includes maintaining the building, grounds and equipment in perfect condition. It is easily apparent that the ability to do so economically depends upon the initial quality of the school plant. Many boards of education, misled by the attractiveness of low initial cost, fail to understand the mounting maintenance expense and do not make adequate provision for it. If any part of a budget is to be cut, the maintenance items are among the first to be pared. Far from being economy, such a practice may be termed gross extravagance—first, because neglect of the physical plant creates unsatisfactory instructional conditions; second, because small repairs long neglected become increasingly expensive, and third, because the physical condition of the plant affects operating costs directly. The best way to solve the problem of high maintenance cost is to demand sound construction at construction time.

As stated, one of the big problems in this field is to convince the board of education of the necessity for immediate attention to repairs. A second problem is the administration of this activity so that instructional needs will be adequately satisfied. Success depends upon the character of the supervisory personnel. The attitude of the individual in charge towards instruction and his understanding and sympathy, will determine whether upkeep is merely a mechanical activity or is definitely integrated and pointed towards the satisfaction of instructional needs. One means of solving this difficult problem is to select a teacher within whose field of interest this activity lies and give him training in the special field. The field of vocational education is most fruitful for this purpose.

Fulfilling Building Demands

The third group of problems relates to obtaining new buildings and to changes in existing buildings for the purpose of satisfying new demands. In this field of problems objective technique has been developed further than in the two fields earlier considered. The third group comprises activities generally classified under the head of "school plant program." They are too much involved to permit of more than general discussion here.[1]

In a functional organization the school plant program is a continuing activity in which planning, executing and appraising are constantly being carried on. The exact condition and need of the school plant is known at any given time and plans for the satisfaction of needs mature regularly as a routine administrative procedure. The problems included under this classification, briefly, are first, the development of a method for conducting essential surveys to determine needs. The available types are the outside survey, the periodical self-survey and the continuing self-survey. Experience points to the latter as the most effective type, supplemented by consulting service when special occasion demands it.

The second set of problems is to determine future community needs through careful study and analysis. The development of instructional policies, both with respect to method of administration and type and extent of organization, must be solved before the future school plant can be considered. Architectural service must be provided and here again the board of education is confronted by at least six practices, of which three have real merit. In terms of instructional policies and future needs, aided by the technical ability of the architect, the existing plant must be appraised and the progressive elimination of unsatisfactory units carefully considered. Standards of appraisal can be developed locally in terms of existing educational policies and the progressive abandonment or change of existing units determined.

After the existing units to be retained have been determined it is possible to develop the ultimate plant. The buildings must then be planned as part of the ultimate plant. New requirements must be considered in the educational plans, which is the translation of curricular needs into physical form. Educational designing is one of the most vital problems in the development of plant needs for at this point lack of educational skill in satisfying curricular needs and lack of knowledge of how to achieve efficient structures will color the entire future program. These are problems that must be solved by the educational specialist trained in this field. The need is best satisfied when educator and architect collaborate and when the final control rests with the educator rather than with the technical construction specialist.

When educational designing has been completed and the sites selected it is necessary to prepare the financial program and plan the progressive rate of achievement of the program. In a large system the finance specialist is entrusted with this work. In the smaller districts the superintendent does the work. Where survey activity is constant, the annual program will represent immediate needs. Where an initial start is being made upon the program, the early needs will include "catch-up" requirements as well. The problem of securing a reasonable adjustment of the burden can be solved through continuing survey.

Other Problems for Consideration

The development of working drawings, the selections of and supervision of contractual service and the problem of equipment service are groups of activities that must be worked out in relation to the fundamental educational policy. As soon as a unit is ready for occupancy it falls immediately into the field of problems already considered.

Finally, the process of planning, executing and appraising the school plant with respect to its efficiency of operation and its contribution to the instructional process should be considered as a continuing and ever recurring cycle of activity, motivated and determined by instructional policies. Only when the school plant can be considered objectively as a secondary problem, an activity complementary to the instructional process, will it be possible to solve the numerous problems connected with it and to develop through such solution a more satisfactory school plant.

[1] For detailed consideration of the third field of problems see Public-School Plant Program by Arthur B. Moehlman, Rand McNally and Co., Chicago, 1929.

Courtesy Dr. F. J. Keller and East Side Continuation School, New York City.

Counselors help each pupil to select the program of work best adapted to their abilities.

Aiding the Pupil to Orient Himself in the World of Occupations

The continuation school should definitely become a factor in the life of each juvenile worker, helping him to develop his power of achievement and his personality to the highest possible degree

By HARRY D. KITSON, Professor of Education, Teachers College, Columbia University

WHEN the continuation school was incorporated into the program of public education it was intended to be a place where boys and girls who had left school and were employed in business or industry might come for part-time education.

The theory was that they would be engaged in some trade and would come to the continuation school for brief periods, ranging from two to eight hours a week, to receive instruction in the techniques of their trade, in subjects related to it and in general cultural subjects. If, for example, a boy had a job in a printing establishment he could leave his shop once or twice a week and go to the continuation school where he would learn still more about printing than he could learn in the print shop.

After several years of effort spent in trying to put this theory into practice, the leaders in the continuation-school movement have come to see that this was a narrow and inexact definition of aims. The continuation school cannot serve primarily as a trade school for several reasons.

In the first place, the total length of time a pupil spends in continuation school may be but a few months, lasting only until he reaches the legal age at which he is free from school authority. The number of hours he attends school is also small—in New York four hours a week, in Wisconsin, eight. In such a short time as this a pupil cannot acquire much in the way of strict trade training, at least, not so much as he could learn by remaining at work.

Secondly, no continuation school can hope to

have enough equipment to enable it to give serious instruction in all the occupations carried on in any community. Even the best equipped schools can do no more than offer training in a dozen groups of occupations. Compared with the hundreds of fields in which children start their vocational career, this leaves out a number of occupations.

Too Young to Choose Occupation

But the most serious obstacle to regarding the continuation school as an agency for giving vocational training is that most of the children who come to it have not yet chosen their occupation. Since they have no vocational objective, the school cannot very well train them. True, each one is legally supposed to have a job. But he did not take it necessarily because he wanted to engage in that line of work all his life. He took it because it was available.

Furthermore, when these jobs are analyzed, many of them are found to have little technical significance. A job in the shipping room of a candy factory, for example, is little different from a job in the shipping room of a shoe factory. The job of errand boy in a wholesale house might not be greatly different from a job as errand boy in a cigar factory.

With such vagueness in objectives the continuation school has found it hard to do serious vocational training and to justify itself primarily as a vocational school.

In the light of these considerations the objective of the continuation school has been reshaping itself in the minds of certain educators. Instead of being a training institution, it has come to be regarded as an institution that should hold out a helping hand and give the pupil the help he needs in developing his power of achievement and his personality to the highest possible degree. It has come to be regarded primarily as a guidance agency, responsible for giving each individual counsel until the day when he shall have satisfactorily adjusted himself occupationally, economically and socially.

A leading spokesman on the subject of the continuation school has said, "Vocational guidance is not imposed upon it but is inherent in it. The continuation school is primarily the young worker's school. The pupil leaves the full-time school to enter employment, but in most cases without knowledge of the forces in life. The continuation school utilizes every known means of guiding him to the right employment."[1]

Again, Keller sees the continuation school as "an organization that will at a period not far

[1] Keller, Franklin J., The Vocational Guidance Task of the General Continuation School. Bull. No. 2, East Side Cont. School Series, N. Y. C., 1928.

Courtesy Dr. F. J. Keller and East Side Continuation School, New York City.

Try-out courses in a number of occupational activities are offered.

Courtesy Dr. F. J. Keller and East Side Continuation School, New York City.

Continuation school pupils answering test papers.

distant carry boys and girls through their occupational adjustment vicissitudes from the time they leave school until they feel competent to steer their own courses."

Cooley points to the fact that the majority of persons in the continuation school are working boys and girls, fourteen to sixteen years of age, who are "in minor occupations in which they do not expect to stay and out of which they would naturally grow. These young persons have practically never made a choice of their occupations nor have they had any experience upon which to base their choice. The school must definitely concern itself, as one of its major interests, with becoming a factor in the lives of these young people, helping them to determine a proper plan of life."[1]

Workers Instead of Pupils

In view of these objectives we should modify our nomenclature. For one thing, we should perhaps not speak of the pupil in the continuation schools as a pupil (for that word smacks too much of the traditional academic school), but as a young worker; of his instructor, not as a teacher but as a counselor, who has the interests of the pupil at heart.

[1] Cooley, Robert L., Trends in Part-time Education, Objectives and Problems of Vocational Education, McGraw Hill Book Company, New York, 1928.

How shall the continuation school proceed to give vocational guidance to young workers? We can answer this question best after reviewing the definition of vocational guidance: "Vocational guidance is the giving of information and advice in regard to choosing an occupation, preparing for an occupation, entering upon an occupation and progressing in it."

Occupational Information Given

The first task, then, is to give information about occupations. This information should consist first of a review of the occupational world, such as is given in many schools through a general course in occupations. An article describing such a course appeared in the February, 1928, issue of The NATION'S SCHOOLS.

This course may be followed by a period in which the pupil intensively studies his occupation. As an illustration of this kind of practical study we append a chart made by a boy in one continuation school who was a messenger in the Western Union Telegraph and Telephone Company. On this chart he indicated the promotional steps he might take in advancing from one job to another with the company and the additional responsibility he would thus assume.

In addition to making such promotion charts the pupil should investigate the nature of the

various jobs in his particular line of work, the earnings, hours of work and educational requirements. After such study he can more intelligently decide whether he would like to remain in that line of work, and if so, what steps he should take in preparing himself for the successive positions.

Try-out Courses Are Offered

As a further aid to the pupil in orienting himself in the world of occupations, the continuation school usually offers a series of try-out courses in printing, woodworking, electric wiring, plumbing, architectural designing, machine shop practice, auto mechanics, radio construction, mechanical designing, tailoring, typewriting, bookkeeping, salesmanship, banking, power machine operating, dressmaking, millinery, cooking, care of home, home nursing and hygiene, music, civil service and the like. Units of work in these occupational activities are grouped in try-out courses so that the pupil can obtain a taste of several occupations and thus see if he can easily become interested and apt in some particular one. In case he does, he can, with the assistance of the counselor to be mentioned presently, set up for himself an educational and vocational program.

While it is coming to be regarded as a tenet of education that every educational institution should regard each pupil as an individual and adapt its services to his particular needs, this principle is especially imperative in the continuation school. For pupils come here not as groups but as individuals. Instead of all pupils enrolling in September as they do in the full-time school, the pupils come to the continuation school as they reach the birthdays when they are legally permitted to leave the full-time school.

Furthermore, they comprise a greater variety of persons than does any grade in a well organized elementary or high school. Some are subnormal, some supernormal and some abnormal. Some have completed only the sixth grade, some have completed high school. They are working at all sorts of things, ranging from simple unskilled work to apprenticeship in the professions and arts.

In view of such differences in natural endowment, academic achievement and social and economic circumstances, the continuation school should deal with these young workers as individuals. Each one is a unique problem and requires unique treatment.

Physical Condition Important

The first aspect that should be examined is physical condition. In most communities a physical examination is required before the child is granted a working certificate. This examination is given either by the school physician or by a representative of the board of health. If the examination shows important physical defects the program, both occupational and educational, should be planned with these defects in mind.

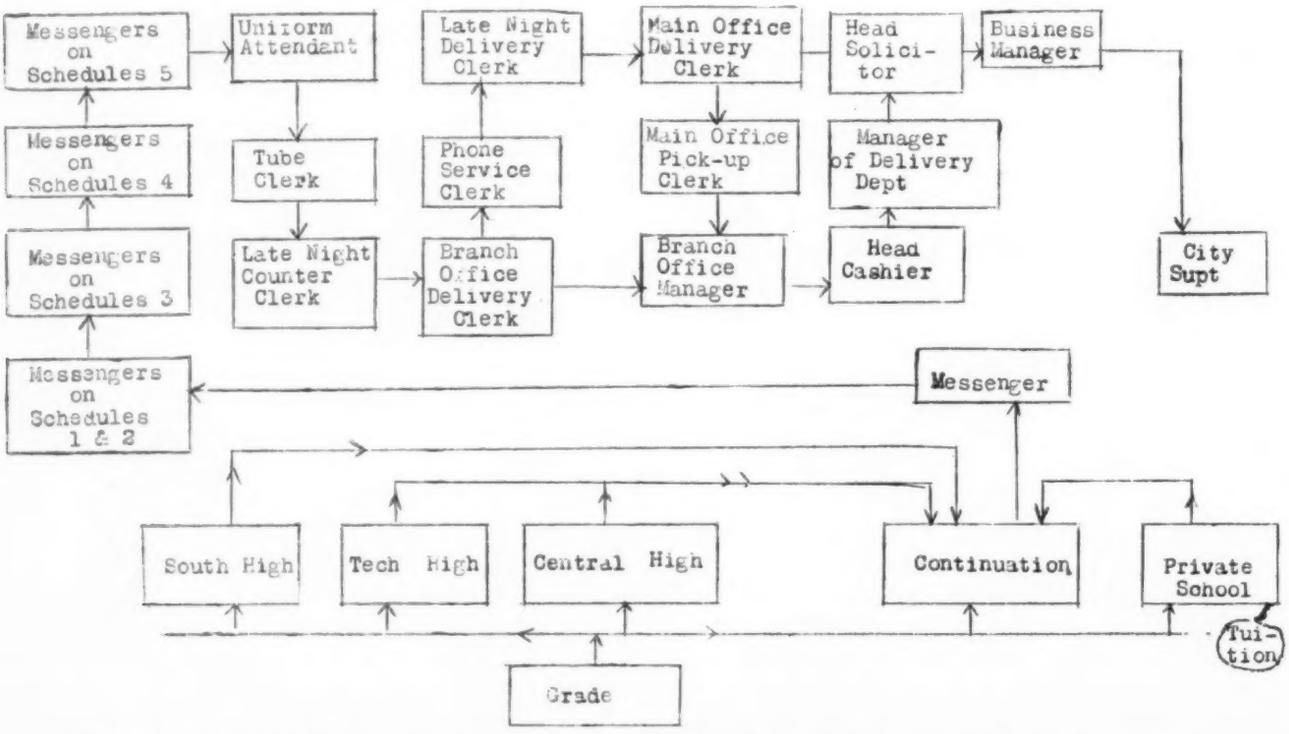

Chart made by a pupil showing promotional steps he might take in advancing to position of importance.

Courtesy Dr. F. J. Keller and East Side Continuation School, New York City.

Girls learn many of the personal niceties in the continuation classes.

The pupil should next be examined from the psychological point of view. His intelligence should be measured, and his achievement in academic subjects. Records should also be available from the full-time school that the pupil has just left.

Some attempts are being made to examine continuation-school pupils with the vocational aptitude tests that are flooding the market, but none of these tests has sufficient validity to justify its use as a guidance device.

An important aspect of the psychological examination is that denoted by the terms "personality" and "character." No scientifically valid tests are available for the accurate measurement of these elusive traits. Still the examining officer in the continuation school can make observations, and teachers over a period of time can make observations that will reveal to some extent the status of the pupil in regard to these important factors.

Teacher Should Visit Homes

The next aspect of the individual that should be examined is his home. What is the attitude of his parents? Of his brothers and sisters? How much financial assistance can his parents give him? How much financial assistance must he give them? These facts are best obtained by the visiting teacher.

Another important aspect is the relationship between the pupil and his employer, which is usually investigated by a continuation-school teacher called the coordinator.

After ascertaining all such facts about the pupil, it is the duty of the continuation school to use them to the end that the pupil may develop himself to the highest possible degree while he is under its care and continue to develop himself after the termination of his continuation-school experience.

Counselors Advise Pupils

It is obvious that provision must be made for centralizing the facts in one office or one individual. One effective method is to assign each pupil to a counselor who is responsible for him in every way. This counselor may enlist the cooperation of other members of the staff who specialize in performing certain functions, but there should be one friendly individual who is in possession of all the facts regarding a pupil so that the latter may have someone to whom he can go for enlightened and sympathetic advice at any time.

The types of adjustment that the counselor will effect are so numerous as to forbid enumeration here. One or two illustrations must suffice.

Loretta was employed in a department store as stock girl. She had strong ambitions to become a buyer. She learned through her study of occupations that the first step was to get on the sales force. Promotion seemed slow. Her counselor informed her that the store where she

was working was exclusive and demanded an attractive personality on the part of its saleswomen.

Loretta needed polish. Accordingly the counselor scheduled her for a course in development of personality. Through this course Loretta learned some of the elements of an attractive personality; what clothes to buy and how to wear them; how to arrange her hair becomingly; how to care for her hands; how to walk; some of the elements of polite conversation. She applied herself to the formation of desirable habits and was soon promoted to a place on the sales force.

Physical Disfigurement Removed

Joe, his counselor noticed, had developed a severe case of acne. It was embarrassing to the boy and was probably an obstacle to his vocational advancement. The counselor sent Joe to the skin and cancer hospital; after several months of treatment and encouragement by his counselor and physician, Joe got rid of his disfigurement. His morale and probably his efficiency as a worker and as a citizen were raised several fold.

From these examples we see that the counselor deals with vocations, health, education, social adjustment, morals; in short, with every aspect of the individual.

Young workers, like older workers occasionally lose their jobs. Indeed, young workers ought to make occasional shifts in the occupational world. But they are not wise enough to make these unaided. They should have all the aid that society can place at their disposal in effecting such momentous changes, any one of which may determine the trend of their whole life. Accordingly the continuation school, in its rôle of vocational guidance agency, faces a serious responsibility for maintaining a placement office whereby each young worker can have help in making the change advantageously. The placement officer must maintain relationships with employers who employ young workers under the continuation-school plan, must investigate places of employment to see that they are suitable; must inform the young worker about the job and show him how to conduct himself, and must introduce him to the employer.

The work of placement is not completed when the continuation-school pupil is officially placed on a pay roll. The continuation school has the responsibility of seeing that he makes good. In the performance of this duty the officer of the continuation school must follow up the case by visiting the worker at his place of employment to see if he is satisfied; by interviewing the employer to see if he is pleased; by ascertaining what further steps the worker should take to advance himself with greatest rapidity, and by seeing that these steps are taken.

In this discussion we have tried to show that the continuation school, to operate with greatest efficiency, must be regarded primarily as a guidance agency for young workers. We have reviewed briefly the nature of the services it should perform in fulfilling this function. While for purposes of exposition we have dealt with these as separate functions, we should recognize that they are really parts of a single process—helping each juvenile worker to develop himself to the highest possible point in all respects.

Interrelations of all sorts must be established. There must be cooperation between full-time school and continuation school, for it is from the former that many of the pupil's records will come. One continuation school in New York City has a member on its staff especially appointed as liaison officer to connect the work of the full-time schools with that of the continuation school.

Close relationships must also be maintained with the attendance and health departments of the public schools and with employers, trade unions, parents and social service agencies. Organizations of the latter type can render great assistance in caring for special cases, such as the tuberculous, cardiacs and psychotics.

Above all, we should note that this conception of the continuation school as a guidance agency implies that the school should render a continuous service to the individual. It follows him through his most difficult phase of life, that of making adolescent adjustments to an adult world. If the school performs this task well, the pupil will continue to regard it as his best friend even after he has left its legal guardianship. He will consider it as a veritable haven in the time of storm. Viewed as an institution of this kind, the continuation school becomes the most valuable institution a community can support.

Making Periodic Health Tests in the School

The value of the periodic health examinations of school pupils has been so generally conceded that the question of the desirability of the examinations seldom arises. The important question concerns the manner in which these examinations shall be conducted. The relationship between scholarship and health seems to be a very definite one and the best scholarship is obtained only when the children are in the best physical condition. For this reason inspections at least should be made in every school.

Does Education Promote Prosperity?

A recent survey of Virginia's educational system indicates that states that maintain the most extensive educational programs push ahead most rapidly in material prosperity and well-being

By M. V. O'SHEA, University of Wisconsin, Editor-in-Chief, The Nation's Schools

WHY, of course, education is essential to the prosperity of a community, a state or a nation. People who spend the most on their schools are always the most prosperous. The states that skimp lag behind those that are more generous in their support of education.

Such would be the conventional way to begin this article.

Educational Programs Increase Prosperity

It can be shown to the satisfaction of anyone that the states which maintain the most extensive educational programs are pushing ahead most rapidly in material prosperity and social well-being. But which is cause and which is effect? I attempted to find an answer to this question during the progress of the survey of the public educational system of Virginia. Some prominent Virginians and people everywhere are expressing doubt regarding the advisability of increasing the allotment of funds for public education. They contend that anything more than elementary schooling could not be of advantage to the state. They ask whether it is not true that a high-school and a college education are used by the recipients for their personal gain and not for the promotion of the welfare of all the people of the state. "Any youth," they say, "who wishes to secure more than a rudimentary education should pay the full cost of his tuition. Why should the state support young people in high schools and colleges when they will sell to the highest bidder whatever they have acquired in these institutions? Lawyers, doctors, engineers, writers, teachers—all charge what the traffic will bear, and more than it ought to bear, for their services. It is unfair to tax all the people of the state in order that a few may prepare themselves to exploit the very persons who have made their advanced education possible."

In Virginia, as in other states, North Carolina is frequently cited as a good illustration of the law (if it is a law) that the expansion of the educational program of a state and its prosperity develop *parri passu*. It is generally believed that the recent extraordinary economic advancement in North Carolina has been due primarily to an enlarged educational program, and in order to secure evidence relating to the matter, I went to North Carolina and interviewed persons who had attained distinction in various walks of life. To each one I put this question: "North Carolina has the reputation of having made great strides in material prosperity during the past two decades; to what do you attribute this prosperity?" Some replied, "To the development of a system of good roads;" others said, "To the development of industries throughout the state;" still others ascribed the increased prosperity to an expanded and improved educational system. But some of the keenest students of economic and sociological conditions were not willing to say without qualification that more education means increased prosperity. They believe that the type of education and not simply the amount of it must be taken into account.

Virginia an Early Leader in Schools

Long before most of the commonwealths in America had got under way in their educational work, Virginia had developed a high grade system of schools and colleges. The College of William and Mary and the University of Virginia are among the oldest and best known institutions of learning in this country. A large proportion of the men who have played a dominant rôle in developing American institutions were educated in Virginia. The preparatory schools and the colleges of the state are rich in traditions of the distinguished men who received their training for leadership in these institutions. Virginia is full of preparatory schools and colleges, most of which have for a long time taken a prominent part in educating leaders for service, not only in Virginia but in other states.

But for what kind of leadership have the Virginia institutions prepared their students? Principally political. Any reader can think of many eminent statesmen who were educated in Virginia schools and colleges. But he will have to search

his memory diligently to recall leaders in other phases of state or national life, in industry, in science, either pure or applied, or in other fields except perhaps in medicine, who received their early training in that state. In Virginia, leadership in the legal field has been coupled with political leadership from the earliest days.

In Virginia, emphasis has been laid upon culture and mental discipline rather than upon resourcefulness and efficiency. As members of the survey staff went about the state in search of facts bearing upon the special problems they had been studying, they remarked upon the amount of undeveloped land throughout the state. Hailing for the most part from states in which the people are eager to make every acre of land produce up to the measure of its possibilities, they were impressed by the fact that a relatively small proportion of the land in Virginia is under cultivation. They commented frequently upon the absence of industries that would be appropriate for Virginia and that could be operated there as advantageously, to say the least, as in the neighboring or distant states in which these industries are flourishing. Further, the staff noted that Virginia has not yet capitalized its superior scenic and climatic features.

The explanation of these conditions can undoubtedly be found, in part, in the predominant objectives and methods observed in every department of the Virginia educational system. Inspection of the instruction in classrooms in elementary and secondary schools and a canvass of the objectives that determine the work of teachers in higher institutions, convinced the survey staff that the principal aims in the schools and the higher institutions are, first, the attainment of culture, and, second, the discipline of the mental faculties.

Virginia Education Lacks Realism

While there are exceptions, it is generally true that the educational work of the state is not designed to train boys and girls for an understanding of and efficiency in the real situations of life. Virginia education has emphasized verbalism and symbolism rather than realism. In the choice of subjects of instruction and in the methods of teaching, the guiding principle has been and still is, to some extent, to store the mind with knowledge without choice of subjects of instruction, and in methods of teaching the guiding principle has been and still is, to some extent, to store the mind with knowledge without reference to the application of this knowledge to the betterment of the economic and social conditions in the state. Virginia education is formal and static. The pupils in the elementary and secondary schools and to a large extent in the higher institutions have not been moved by the subjects taught or the way in which they have acquired them or in the advice they have received, to make use of the education gained at school and college in practical ways in agriculture, in trades or industry or in the making of homes. The rising generation, like the preceding generations, have learned school and college subjects quite largely in a memoriter way, assuming that education consists in the acquisition of facts without relation to their effective use in the promotion of physical and social well-being. They have amassed knowledge on the theory that the mere possession of facts confers culture.

Manual Activities Disregarded

Virginia has been pursuing the educational policy, once followed in all commonwealths but now largely abandoned by those that are making rapid progress in material and social betterment, that it is not as important to gain knowledge that can be utilized in every-day situations as it is to acquire and retain knowledge that does not bear directly upon any of the practical situations of daily life. When young people emerge from school or college they do not feel an urge to deal with realities.

This situation has existed for a long enough period to determine the attitude of the people of the state toward manual work, agriculture, vocations, trades and industry. The so-called learned professions have been greatly exalted at the expense of any type of vocation requiring manual as well as mental activity. The profession that, more largely than any other, depends upon a classical, linguistic and political type of mind, has flourished actively and successfully in Virginia. The legal profession, with which is coupled political interest and activity, occupies the first position both in the estimation of the people of the state and in the number and distinction of its votaries. The membership of the teaching profession is larger than that of any other profession, but it does not enjoy the prestige that the legal, the medical and the engineering professions enjoy.

The schools and colleges, speaking generally, have failed to develop interest and capability in realism as contrasted with idealism or verbalism.

Young people have spent their time dealing with words and symbols rather than with the things to which they relate. They have employed the faculty of memory rather than scientific reasoning or creative imagination. They have learned the contents of books and lectures and

in the classroom they have recited verbatim. They have not solved problems that have given play to their originality and initiative. They have not undertaken projects in which they have been required to be dynamic. They have been principally receptive rather than active and executive.

It should be stressed that the type of education the survey staff found to be prevalent in Virginia to-day was found throughout the country in earlier times. But many of the states have inaugurated a somewhat different kind of education, designed to develop interest in and capacity to deal with real, as contrasted with verbal and symbolic, objects and situations. The states that have adopted a dynamic educational program have advanced in material and social well-being more rapidly than Virginia has done. It is impossible to prove statistically that the states that have changed from a classic, verbal or static to a dynamic type of education owe their increased prosperity wholly or mainly to that fact, but it is probable that this is the case. During the progress of the survey, eminent students of economic and social well-being and of education were asked to express their views concerning the relation of a modern dynamic educational program to the advancement of a state. Without exception they said that in their opinions there is a direct causal relation between them.

Program Tinged With Early Ideals

Education in Virginia to-day is deeply tinged with the ideals of the education of an earlier day. But an education designed to discipline the mental faculties and to confer culture upon students was better adapted to the economic and social conditions in Virginia a hundred years ago than it is to-day or than it will be in the future. Nearly three-quarters of a century ago, Virginia underwent a cataclysmic change in its economic and social order. It still feels the disastrous effects of this catastrophe. It has not been able to reconstruct its educational program to meet the changed conditions. The states with which Virginia is in competition economically have gone forward in developing their material resources and in cultivating in the rising generations through a dynamic educational program an interest in realism and some capability of dealing with actualities, so as to convert natural resources into products that contribute to comfort and social well-being. It is not that these progressive states have developed in their schools and colleges finished artisans or farmers, but the dynamic type of education has awakened an interest in and has dignified agricultural and other pursuits requiring manual as well as mental activity. The attitude of the people in these prosperous states has been such as to encourage young people to devote themselves to realistic instead of to political pursuits.

Other States Make Greater Progress

It is not the intention here to recommend one type of education above another so far as theoretical values are concerned. But Virginia is confronted with a situation that should determine the type of education that should be emphasized in the schools and higher institutions. Virginia formerly stood on a par with sister states in everything that contributed to material welfare and social prosperity. She stood ahead of most of them. But the states that formerly looked up to her and regarded her as their model are not doing so any longer. They are, in fact, pushing ahead of her. Virginia is determined to maintain her position on a par with the most advanced states. Virginia is demanding for her citizens advantages that depend upon material prosperity. The state is not content to continue on an economic plane that would have been satisfactory fifty years ago but is not satisfactory to-day, partly because of the progress that has been made by many states during the last three or four decades. This fact demands that the prevalent type of education in Virginia be adjusted in accordance with a dynamic program.

Courses of study and methods of instruction in rural, elementary and secondary schools as well as in higher institutions have not laid stress upon intellectual work requiring the tracing of cause and effect in nature and in human society. In the lower schools there has not been until recently any study of nature, and there is only a negligible amount of such study now. In the higher institutions science has occupied a subordinate place. So far as it has been possible to analyze the interests and modes of thinking of the people of Virginia, it appears that they are not, as a people, scientifically minded. They are more politically and literary minded. They have not been interested primarily or even considerably in the advances that have been made in the application of scientific laws to the affairs of daily life.

It is not intended to make dogmatic statements here regarding such complex and elusive matters as the interests and types of thinking that predominate among the people of a commonwealth, but it may be said that the people of Virginia have not been thinking according to cause and effect in natural situations to such an extent as have people in states in which there has been

more rapid progress in the utilization of the forces of nature for the improvement of human well-being.

The habit of thinking in verbal instead of in causal terms is characteristic of pupils in the schools, not only in respect to nature but in respect to human nature. Pupils in schools and students in colleges are engaged largely in learning words and symbols and arranging these in the patterns set forth in grammar, in arithmetic, in algebra and so on. And in the pursuit of history, civics and other subjects dealing with human nature and the relationships of people, they have learned the contents of textbooks but have not traced the laws that determine human behavior. They do not trace cause and effect in history and in human society. This absorption in verbal and symbolic studies has been responsible, at least in part, for the establishment of interests and modes of thinking that have retarded the progress of Virginia.

In the course of their study of the Virginia educational system the members of the survey staff remarked upon the refinement and culture of the people with whom they had relations. How far these qualities have been nurtured by the educational work of the state and how far they are the result of inheritance and of home training it is impossible to determine. It is probable, however, that all three factors have played a part in molding the personal and social characteristics of the people. It is also probable that the social traditions of Virginia have tended to instill in the rising generation refined demeanor and considerate and gracious social attitudes. The educational system should undoubtedly receive credit for a share in cultivating estimable personal and social qualities in the youth of the state. This virtue of Virginia education can undoubtedly be retained while adding thereto the qualities of resourcefulness and dynamic ability necessary for the rising generation in order that Virginia may be able to make adjustments to the new economic and social order brought about by the rapid development of the states with which she is in competition and with which it is essential that she keep abreast in material and social prosperity.

Report Shows That College Professors Are Underpaid

In a report on the income and living costs of the faculty of Yale University, prepared by Professor Yandell Henderson and Maurice R. Davies, their present salaries range from one-third to two-thirds of the $15,000 or $16,000 taken as the standard of the economic level for a professor. According to an article in *School and Society*, the report, which was based on a questionnaire to which 63 per cent of the faculty replied, took as a standard for the economic level of a professor after twenty-five years of service, the income that would be necessary to maintain a home in a ten-room house which he owned free of mortgage, to keep one servant and pay for some occasional service, and to provide an education for his children in preparatory school, college and professional school on an equality with that obtained by the average student in Yale University.

The amount required for such a standard of living would be about $16,000. The salaries of professors and assistants, the report states, range from $3,000 to $8,000 a year.

The All-Year School—One Way of Reducing Crime Expenses

"This country is spending about three billion dollars a year for education and twenty billion dollars a year for crime, or one dollar for education to each seven dollars for reform. If another billion was spent to operate the schools all year, would it not pay a premium?" This question is asked in a recent article in the *Ohio Teacher*.

The article continues:

"The children are turned out in the streets for a twenty-week summer vacation. We then fill our prisons with the results of that kind of living and wonder why. Would not twelve-month school guidance help this?

"In the all-year school the child who starts to school at the age of six and attends exactly the same number of months will graduate from high school at fifteen years of age. The next four years, if the child is compelled to work, will produce at least half enough to pay for his own progress through the grades and high school. Formerly where two or three must give up the desire to go through the high school, it would be available to the whole family as it should be.

"For the unfortunate child to whom vacation means nothing but aimless loafing on the streets there should be some form of summer school, better to be compulsory and supported by the state. It is not always an easy task for parents to furnish suitable occupations or recreation for the vacation period. All-year schools are a good means of showing common sense in using available time and an empty school plant. All-year schools are progress with which fine leadership will face a new dawn in education."

Psychiatric Social Service Applied to the Schools

By

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AND

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Los Angeles City Schools

THE usefulness of workers trained in the mental hygiene approach to children's difficulties is being recognized each year by an increasing number of school systems.

Organized scientific work of this type was first carried on by private agencies or foundations. Later, the people themselves began taking up this responsibility through their community chests or through their public schools.

This article discusses the organization and methods of a division of psychiatric social service that deals with the problems of school children in a large city school system.

The social service division of the department of psychology and educational research of the Los Angeles City Schools was established in September, 1925. It consists of a case work supervisor and two trained social workers. A large part of the work of this division is done in cooperation with the psychological clinic staffed by four psychologists. The physical examinations are made through the cooperation of the city school health department.

The cases are referred to the psychological clinic by parents or by any representative of the Los Angeles city school system, by social agencies or other interested persons. In general the procedure follows these lines: An appointment is made by the secretary for the psychological examination of the child. The date and time of appointment are given to the case work supervisor. The case is cleared through the Social Service Exchange. Then it is assigned for social investigation, and the social data are obtained and dictated, and given to the psychologist prior to the examination of the patient. The next step is the psychological examination followed by a physical examination. After the examinations are completed, there is a conference between the psychologist and the social worker. At this time it is decided who shall be responsible for treatment. Any necessary reports of the case are dictated following this conference.

Clinic and Nonclinic Cases

The cases handled by the social service division may be divided into two large groups—clinic cases and nonclinic cases. Clinic cases are those that have the service of the clinical psychologist; nonclinic those that do not have examination by the clinical psychologist but do have contact of some sort with the social service department.

Of the clinic cases, a number are referred to the social service department for investigation only. The social history is given to the psychologist, physician or whoever is handling the case, and treatment is carried on by that person without further aid from the social worker. Other clinic cases are referred for both investigation and treatment. In certain instances the treatment is

carried on cooperatively by the psychologist and the social worker; in other instances by the school and the social worker or by the social worker alone through her contacts with the parents.

A case in which the investigation was made by the social worker and the entire treatment carried on by the psychologist was that of seven-year-old Harold. Harold caused his mother so much worry because "things don't seem to register and he has a general habit of protesting," that she consulted the principal of his school in regard to what she might do about him.

Mother More at Fault Than Child

The social history showed a mother so nervous that she tried in every way to keep Harold away from her so that she would not become upset and show her nervousness to him. He was locked out of the house the greater part of the day. He had never been given any responsibilty, yet the mother complained bitterly of his indifferent, irresponsible attitude and his lack of appreciation of the value of time. The psychologist had a long talk with the mother, which resulted in a real change in her attitude not only toward the boy, but also toward herself, and the aid of the social worker was considered unnecessary.

Rose, aged twelve, was a puzzling child to her attractive decidedly feminine rather conventional mother, because she had always wished she had been a boy and loved athletics and most other things that boys particularly like. Rose's mother thought her queer and Rose thought her mother old-fashioned. The various difficulties that arose seemed to spring from mutual misunderstanding. In this case the psychologist had contacts with Rose while the social worker undertook the treatment of Rose's mother.

Inattentiveness and disobedience were the two chief complaints about Edna, aged seven. She was so disagreeable at home that everyone disliked her. The history showed the mother as a childish type of person with many difficulties of her own and it seemed to be chiefly her treatment of Edna that needed changing. After a conference, it was decided that the social worker should give the treatment in this case.

Nonclinic cases fall into three classes according to the service given—consultation, short service and advisory. The consultation cases are referred by agencies, schools, parents and others for various reasons. In these, a complete social history is not obtained by the social worker. Her task is to make a brief investigation of the case and, through her knowledge of both the school system and the agencies, assist in determining the best available means to solve the problem.

Joe was to be placed in a foster home by an agency. This agency had adequate resources for social investigation, mental and physical examinations and treatment. Joe was of average intelligence, but restless, irritable and irresponsible. Three suitable foster homes were available. Much depended upon Joe's school adjustment. The question arose as to which foster home was in the school district most desirable for Joe. The social worker was called into consultation and through her knowledge of school resources, personality and understanding of principals and teachers, the most desirable school was decided upon and thus the foster home was selected.

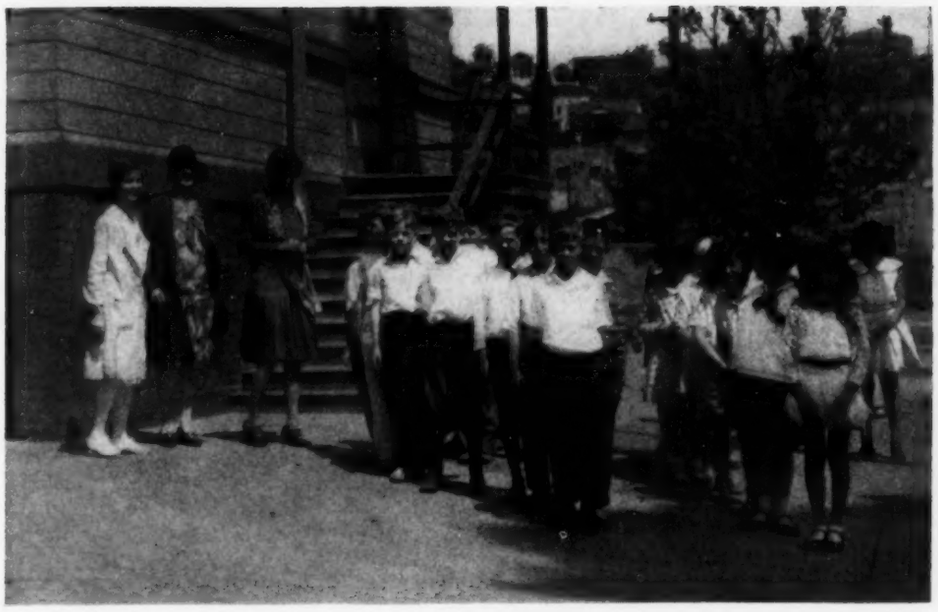
Frequently a parent from some of the outlying districts requests, directly or through a school in the district, assistance in providing physical care for a child. Alice had infantile paralysis when her family was living on a farm in a southern state. When the family moved to one of the agricultural districts near a Los Angeles city school, Alice entered classes greatly handicapped because of after effects of infantile paralysis. The principal of the school called one of the social workers, who investigated the case and found the family too poor to pay for treatment. It was arranged to have the child attend a free clinic for examination.

Sometimes in cases referred by a principal, teacher or counselor because of a child's failure in school, an investigation shows that the chief causative factor of the poor class work is a home or family situation that can be handled more satisfactorily through another agency. In such cases mental and physical examinations and school adjustments are made by the psychological clinic and the case then may be carried on as a cooperative one between the school clinic and the particular agency to which it has been referred, or it may be turned over to the agency.

Father Unable to Control Girls

Mary and Blanch, sisters, aged thirteen and fifteen, were referred because of lack of attention, day dreaming and resultant failure in school work. The worker discovered that these girls had lived with their father since the death of the mother ten years before. The father, an easy-going day laborer, was unable to control the girls, who had often been out until after midnight, their whereabouts unknown. The father tried all the methods of discipline he knew without avail. He was worried and anxious for assistance but did not know how to obtain it without calling the police. The worker was able to put him in touch with the proper agencies to assist him.

Jack White was referred because of "failure



A principal, teacher and social worker observe the behavior of a group of children on the playground.

Youngsters of a nursery school derive the benefits of a sun bath while playing about a pond.

in school work, though apparently normal in intelligence." An investigation of this case disclosed the following situation. Jack lived with a half-sister, Mrs. Johnson. In this home lived Mr. and Mrs. Johnson, their sixteen-year-old daughter, one half-sister, two half-brothers and Mrs. Johnson's father, a paralytic. One of the half-brothers and the half-sister were in a school for defective children. Mrs. Johnson was an active tuberculous case. Mr. Johnson could not support all of the family and Mrs. Johnson did sewing at home to assist with the support of the family. This case was referred to an agency engaged in family rehabilitation work.

Parents who are dissatisfied or uncertain in regard to school placement of a child may call to ask about facilities for mental examinations and diagnosis. Agencies often have to deal with a child concerning whom they wish a mental test. If they do not have such facilities within their own organization, they may call for information or assistance from the psychology department.

The four types of service listed under consultation then, may be briefly summed up as follows: (1) school placement; (2) recommending available resources for physical care; (3) advising as to type of agency for handling the particular problem; (4) obtaining facilities for mental diagnosis.

The short service cases are those referred to the social service department by schools, parents, agencies and others for investigation and for treatment of a specific difficulty.

The case of Jose Gonzalez concerned a Spanish boy who was born in California but who, shortly after his birth, was taken to his maternal grandparents in Spain. When he was seventeen years old he returned to his parents—blind, unable to speak or understand English and with no schooling. He had been under medical care for his eye condition and the prognosis was poor. The

boy was discouraged because he felt there was no place for him. The father was an industrious day laborer but unable to provide adequately for his large family. The case was referred to and accepted by the State School for the Blind.

One of the cases referred for special investigation was that of a Mexican girl who had left her home and was telling "queer stories" in regard to the type of place in which she was living. She described it as a house where many other Mexican girls were kept with a "landlady" in charge. An investigation showed the foster home to be a religious training school for girls placed there at their parents' requests, to become missionaries among their own people. The girl's story regarding the home was vague because of language difficulty and had been misinterpreted.

Full Social History Desirable

In those cases where advisory service is given a full social history usually is obtained. This reveals some of the causes for the difficulty, such as maladjustments among members of the family, unwise parental management and discipline, economic stress, lack of companionship with other children or one of the many other factors that time and time again work havoc with the behavior and personality of children. The history often indicates the need for physical and mental examinations. Some children are referred for this advisory service by physicians not connected with the clinic or by counselors. Frequently in such cases they already have had physical or mental examinations. In other cases the social worker, after taking the social history, arranges for further examinations, mental, physical or both, as the particular situation demands.

In the light of the examinations, the social worker, sometimes cooperatively with the other examiners, attempts to analyze the maladjustment and outline methods for treating it. The whole situation is talked over with the parents and suggestions given to them. Means of improving the school situation are discussed with the principal and teacher. After the treatment is started, the social worker may follow the case at frequent intervals or may leave to the parents or the school the responsibilty for arranging further contacts if they seem advisable.

Among children receiving this type of service are those attending the nursery school, conducted under the guidance of the director of the department of psychology. Mental and physical examinations are part of the routine for these children. The staff of the nursery school carries on the treatment, calling on the social worker for help when it is needed.

Three-year-old Elaine came to the school shortly after she had acquired a new sister. The history taken at this time showed that Elaine came from an attractive, cultured home. Her parents, intelligent, well educated, gave much thought and care to her upbringing. She had a little difficulty about going to sleep alone at night, but with the help of the suggestions given, parents soon worked this out satisfactorily.

As time went on Elaine began to develop certain undesirable tendencies. She became rather absent minded and negativistic. She seemed to take a delight in teasing the other children and in doing things at home that provoked her mother. She returned to her outgrown baby talk; insisted she wanted to sleep in the wee crib with her baby sister, climbed into her sister's play yard.

The social worker was asked to discuss the new developments with the mother. On the basis of the information obtained by the social worker and the observations of Elaine made by the nursery-school staff, treatment was outlined. Elaine, evidently regressing to infantilism, was returning to her baby ways and developing undesirable tendencies as a means of winning back her mother's attention, so much of which had been given to the new baby. Methods of making Elaine want to "be big," more acceptable ways of having her gain attention, were worked out and improvement began.

The necessity of developing a particular technique of investigation is due to the heavy case load inevitable in public-school work. The services of the department are open to every school in the system—299 elementary schools, twenty-two junior high schools and twenty-three senior high schools. The Los Angeles city elementary-school district covers an area of 671.44 square miles, and the city high-school district covers an area of 994.94 square miles. This includes the harbor district, the industrial and manufacturing districts, the best residential districts and the agricultural districts, thus drawing children from widely different social and economic levels and racial backgrounds.

Worker Must Limit Visits

Because of the brief time available for obtaining essential data, the worker seldom sees the parent more than once, and due also to pressure of work, sees only those informants who seem necessary in order to obtain a picture of the child in his environment. It is necessary to hold the informant to the points under consideration and forego the many interesting sidelights that may be obtained when time permits a worker to allow an informant to wander on at random. There is the constant need to bring the informant back

to the point if he digresses for any length of time.

Unlike many clinics that take children for study only after parents express their willingness to cooperate in the investigation and treatment, the school clinic must sometimes take cases where the parents are at first antagonistic. This antagonism is one of the most difficult conditions that the worker has to meet and overcome. If it were not for the worker's knowledge that behind her is the school system, the authority of which virtually all parents respect, she would often be less hopeful of changing the parents' attitude.

Many Difficulties Encountered

The need for establishment of quick rapport under unfavorable conditions is met constantly. Because of insufficient office space, it is necessary for workers to interview parents in a room where two other interviews may be taking place, patients waiting for interviews and a stenographer typing or taking dictation. In this situation it is amazing how much intimate detail a worker is able to learn. It is here that she obtains information regarding the psychological atmosphere of the home, the type of discipline the child has known and his relationship with different members of the family.

The first step in obtaining the social data usually is the school investigation. The worker visits the school where the child is attending classes. First, the case is discussed with the principal so that the worker may obtain his view of the child and the situation and learn what suggestions he may have as to the best solution of the difficulty. While the worker is in the office, she may get such information as is contained on the child's health card and the report of all psychological tests that have been given to the child by the school counselor.

Then the social worker interviews one or more of the child's teachers. Every teacher has for each child in her room a card on which is entered the following information: child's progress since entering the Los Angeles school system, his attendance record, date and place of birth, nationality, name of parent or guardian, address and telephone, school transfers with number made, the date and name of schools. The worker discusses with the teacher the child's school work, any particular abilities or disabilities and general accomplishments. The child's behavior both in the classroom and on the grounds is talked over in detail, the worker obtaining as many illustrations of his various ways of reacting as possible. The teacher is asked how he responds to authority and discipline, what sort of playmates he chooses and his general relationship with the other pupils. The worker attempts to learn the teacher's idea of the child's personality and interests. If the teacher has had any contact with the family, an account of this is obtained. Any treatment measures that have been tried and their results are discussed. While the worker is at the school, she collects information regarding any possible

A mother giving the history of her child to the social worker.

facilities for treatment either within the school or elsewhere.

Frequently for various reasons, a parent has been notified by the principal of a school that he or she is to come to the office of the social worker on a certain date at a certain time to discuss "John's problem." Sometimes no further explanation of the reason for a study of the particular child of this parent has been given, so it devolves upon the worker, as the first step in the interview, to explain the reason for the nature of such a study. Very often there are objections on the part of the parent. An aid in meeting these objections is the recognition of the common interest of school and parents in the success of the child. Parents' objections usually may be overcome through an appeal to their sense of justice to the school and to the child.

The second step in nearly every case is something like this: "There seems to be some question in regard to John's school progress. What do you think is the difficulty? I am sure you have been

thinking about this, and we want your help." This lets the parent (usually the mother) lead the interview and gives her an opportunity to release her emotions in regard to the situation and to see that her suggestions are considered valuable in helping to solve the problem.

Usually the mother quickly tells her side of the difficulty and rarely, if ever, does she feel that

Time for orange juice at the nursery.

her child is entirely blameless. During the time she is stating her ideas as to the causes of the present difficulty, the worker gets an insight into the family relationships. After the mother states her idea of the problem, the worker takes up some noncontroversial topic such as health. From this, the important facts of developmental history and habits may be discussed.

This leads easily into the fourth step, which is a direct approach to the problem and in which the worker leads the interview. At this point the consideration of reasons for the child's difficulty and details of his personal history are discussed. This frequently brings about an emotional condition in parents and it seems wise to take up at this point a discussion of the child's interests. A tense situation is nearly always relieved by the question, "What is John interested in?" All parents seem particularly interested in this and enjoy discussing it, possibly because it gives an opportunity to discuss their own life desires, their own likes and dislikes, the possibility of attainment of their unsatisfied desires through the lives of their children. It also gives to the worker a most important clew for recommended treatment.

By this time, if not before, the parent is talking freely and a friendly relationship is established so that the worker can obtain information concerning both the immediate and remote family background.

As has already been stated, because of the brief time available for collecting the essential data the worker sees as few informants as possible to obtain a picture of the child in his environment and his response to the various situations in which he is placed. If a child has had a recent court record, details about the case are obtained.

Reports of recent medical examinations or any medical treatment prescribed are obtained. If the family is known to another social agency, contact is established with that agency. In some cases it seems essential in order to get a real picture of the situation to see other members of the family or outside persons. It is left to the judgment of the worker to determine what supplementary investigation is necessary in each particular case.

As in investigation, so in treatment there is a necessity for developing a particular technique to fit the particular situation. The first factor in the situation is the element of time, the large number of cases that must be handled demanding concentrated treatment. Treatment must begin at once with the taking of the history. The questions of the social worker during the first interview aid the parents in understanding certain causative factors of the difficulty and in formulating certain steps in treatment.

Often as the social worker discusses the child's difficulty, asking just when and under what circumstances it began, the parents will connect certain events and situations that before had seemed quite unrelated. Sometimes for the first time the parents really study the conditions that seem to occasion the outbursts of temper, the disobedience, the stealing or other aberrant behavior. For the first time they are led to analyze their own attitudes and points of view. For the first time the camera focus is shifted and they are led to see themselves as their children see them. Then, by tactful questioning, the worker may again shift the focus and lead them to see the whole situation as the child sees it.

Starts Parents on Right Method

Thus the social worker, through questioning, helps the parents to pick up the scattered pieces of the puzzle and put them together to form a picture that shows at least some of the background of the trouble.

Once this is done, the parents may on their own initiative formulate certain steps in treatment. Having seen some causative factors that they had not considered before, they may think of some wise method of overcoming these handicaps. If not, they often express a desire to know

what the social worker would suggest. Here the social worker must proceed with great caution, because at this time she usually has no examination of the child on which to base specific advice. She may tentatively point out possible treatment measures. She may discuss certain unfortunate or unwise methods adopted by the parents and what effect these may be having. She may suggest the probable disadvantages of certain attitudes the parents have built up toward the child or the situation. If examinations are to be made, she will advise awaiting their outcome before treatment is outlined.

Give Parents Responsibility

In this way, by summing up the various factors in the situation, pointing out possible cause and effect relationships, the social worker has started the parents thinking along lines that form the basis for further treatment. In some cases this first contact is the only opportunity for social treatment. The child may have come in primarily for a change in his school placement or his difficulty may prove largely physical. In such cases the parents may not return to the psychological clinic, the responsibility for treatment resting with the school or with the medical agency to which the child is referred.

The second factor in the treatment technique is giving to the parents a great deal of responsibility in treatment. In the last analysis, most treatment work must in any case be done by the parents but because of the particular situation in the clinic, they are given even more responsibility for carrying on treatment than would be the case if there were more time. Sometimes the initiative for asking for further help is left to the parents, no follow-up being done by the clinic itself.

Follow-up Work Is Important

In most cases, there is a periodic follow-up. When the psychologist and social worker are cooperating in the treatment, the follow-up may be done by either, depending upon the particular case. If the psychologist is doing the follow-up and finds that there is some person to be seen away from the clinic or that the parents do not come in as requested, the social worker will be requested to see the person or to make a home follow-up visit.

If the social worker, as she follows up her cases, feels that a particular child needs to return to see the psychologist, she arranges this visit. In a few instances, the child reports regularly to the psychologist and the social worker has regular contacts with the parents. The length of time between follow-up contacts depends upon the particular case. One case may be seen every week, another once a month, another once in six months.

The work of the social service division in the schools is of such recent development that it is as yet impossible to measure its results definitely. It has, however, passed the experimental stage and is growing both in scope and in methods.

The need for the psychiatric social worker in the schools is shown by the constantly increasing demands for her services. The school seems to occupy the strategic position for detection and study of all types of child maladjustment. Therefore the workers anticipate a time when their work will serve to coordinate all the social forces of the school and community and when, through early studies of the child's background and abilities, behavior difficulties will be greatly lessened and juvenile delinquency reduced to a minimum.

Failure—The Chief Source of Waste in American Education

"Failure is the chief source of waste in American education." These are the words of Dr. John Dewey, professor of philosophy at Columbia University. Doctor Dewey believes that the elimination of waste, due to breaks and duplications in the joining together of various portions of the school system, depends upon consideration of the process of growth, physical, psychological and moral, of the pupils. Different powers ripen at different rates, and the development of each capacity as it manifests itself should result in achievements which then become tools in the maturing of other powers.

Waste in education results from failure to observe these principles, according to Doctor Dewey. One example of educational waste is failure to adapt the teaching of early school years to the normal activities and experiences of children at that age, due to the external imposition of the three R's; others are the uniform four abreast treatment of school subjects, instead of alternate periods of concentration and remission; the confining of teachers to single grades; the absence of a sufficient variety of teachers in early grades; the tendency to justify existing divisions of the school into separate units.

The chief source of waste, he points out, is failure at all stages from the elementary school through the college to utilize the experiences of children gained out of school. Isolation of school from life is the chief cause of harmful isolations within the school. The problem could be best approached as one of continuous differentiation rather than as one of external articulation.

New Methods for Constructing a Workable Curriculum*

Usual plan of establishing courses of study reversed by group that based its investigations upon specific activities found in classrooms instead of upon idealistic generalities

By WARREN W. COXE, State Education Department, Albany, N. Y.

CURRICULUM investigations are not producing marked changes in teaching practices in the average public-school system. The investigations have produced results in many of our best private schools and in a few of the more progressive public schools, but in general the influence has been extremely slight.

Possibly this is because those who have been most active in curriculum studies are university men who have been mainly interested in the broader more theoretical aspects of the problem, and who are not in close enough touch with the classroom situation to outline carefully the path the teacher must follow to attain the goals they have set up. These studies have been scientific in a measure and the scientific procedure has been employed to find and evaluate materials, such as basic vocabulary and the most needed scientific knowledge, but it has not been directed toward producing a workable curriculum as a whole.

The primary purpose of the experimental work in which I have been engaged was to try out a method of constructing a course of study that could be put into practice immediately, not in producing certain items or parts that might help in later curriculum construction.

Specific Aims Now Emphasized

Before describing our procedure may I call your attention to what seem the outstanding trends in curriculum construction to-day, in contrast to what they were a generation or two ago. The change has been from a consideration of vague general aims and the construction of general courses to the formulation of a multiplicity of specific aims and the construction of courses comparatively narrow in their application.

The transition from thinking in general terms to more specific terms probably has been brought about by abandonment of the psychology involved in formal discipline and the substitution of a psychology that disregards general transfer and insists upon training in specific skills. Thus we have curriculum workers who are analyzing in minute detail each particular job, asking experts to list activities and personal qualities needed by adults, listing the interests and activities of children or attempting to find what must be learned to make pupils good producers and good consumers.

Practical Technique Needed

I have no desire to minimize the contributions that have been made, but these studies do not provide an adequate course of study for public-school needs. While the results help us to realize the extent of our problem, the technique is not immediately applicable. There is a hiatus between the studies and the changed classroom practice because of the difficulty of organizing the material into teaching units. The greatest need is a course or courses of study only one or two steps in advance of general classroom practice to-day. This is a frank recognition that we cannot go all the way at once and that we must improve our materials of instruction little by little.

The materials produced by curriculum investigators are not in form for a curriculum until they have gone through the refining process of use in the classroom. Therefore selected teachers should become acquainted with these materials, modifying and reorganizing them through classroom use, and the curriculum committee should use these materials in constructing the course of study only when so recognized.

Our experimental work has been done in special classes for subnormal children but we believe that the procedure used is generally applicable with but slight modification.

The actual material is so voluminous that it cannot be presented here. About all I can do is to describe the procedure of gathering and the methods of handling the data. Preliminary to such a description, I should state four underlying

*Read before Section Q, of the American Association for the Advancement of Science, New York City.

assumptions accepted in all our course planning.

1. We decided to examine present classroom procedure as a basis for the new course of study instead of trying to determine first what was the ideal or desirable content of the course of study.

2. We planned to start with concrete statements of activities and build them into an integrated whole instead of starting with more general statements of aims that would later be put into operation through appropriate activities.

3. We realized that the course of study must recognize the teaching groups actually found in the special classes. Because of the wide variation in ability in most special classes, teachers generally find it necessary to form sections and adapt the work to the need of the pupils in each group.

If our proposed course of study was to be helpful, we felt it must help the teacher in handling each of these sections.

4. No assumption was made as to the number of such sections we needed to recognize, or in regard to their characteristics. The definition and description of these sections therefore became part of our curriculum study.

Usual Method of Study Reversed

One point of difference between our procedure and usual procedures in curriculum construction should be noted. Whereas the general tendency is to work from general aims and objectives toward specific activities, we reversed this method and started with the activities now existing in the classrooms and worked toward their better organization. It seemed to us that in starting from the general and going to the particular, the procedure was essentially philosophical and not scientific, especially as the general had not been established previously by scientific methods.

To put our plan into operation, four blanks were prepared. Form A was filled out once for each class. It called for the names of the pupils, the present chronological age, the intelligence test results and the section in which the pupil recited. Form B was filled out once for each class. It called for the teacher's daily program and gave the schedule of activities for each of the sections. Form C was filled out daily for the class as a whole. It requested the teacher to list the difficulties she encountered in her teaching during that day, and any observations in regard to spontaneous activities or interests of the pupils, outstanding successes or failures, and the equipment and supplies used in the day's work. Form D was filled out daily for each section of each class and gave an opportunity for the teacher to describe the character of the activity in each of the traditional school subjects.

We obtained a complete record of activities for a period of two weeks. All types of special classes were represented, including all parts of the state and various sizes of communities. Approximately fifty teachers cooperated and kept careful records during the time requested.

When data were received, our procedure in handling them was as follows: From Form A we calculated the mental and chronological age medians of each section of each class. These were then studied to determine the number of distinct groups that should be recognized. While there was some lack of uniformity in regard to the nature of the sections it was obvious that teachers felt the necessity of recognizing, for teaching purposes, different kinds of needs. Ten groups were finally decided upon as follows:

Group A. Children of chronological ages of 8, 9 and 10 who have mental ages below 6 years.

Group B. Children with chronological ages of 8, 9 and 10 with mental ages of 6 and 7.

Group C. Children with chronological ages of 11 and 12 with mental ages below 7.

Group D. Children with chronological ages of 11 and 12 with mental ages of 7 and 8.

Groups E and F (one for boys and one for girls). Children with chronological ages of 13, 14 and 15 with mental ages below 8.

Groups G and H (one for boys and one for girls). Children with chronological ages of 13, 14 and 15 with mental ages of 8 and 9.

Groups I and J. Same chronological ages as the last two groups but with mental ages of 10 and 11.

Data Entered on Summary Sheets

The next step was to plan large summary sheets, one for each subject, and on each sheet a column for each of the groups just described. From Form D, the daily report of the teacher for each section and the activities in the subject were entered in the appropriate column.

Similar sheets were made out for each of the traditional subject matter divisions. Each of these large sheets was studied critically. In some cases we found the same activity mentioned several times and the duplications were eliminated. As might be expected we found that the teachers who cooperated with us were not equal in their ability to select appropriate material for the different groups. Therefore we found some activities that, judged by generally accepted experimental results, were obviously absurd for certain groups. These were eliminated.

In other instances there were obvious omissions. It might be that an activity would be found in both Groups A and B, omitted in C, and found

again in D and E. The omission from C was obviously by chance and we made insertions in such instances. As a final step in reviewing these summary sheets it was necessary to compare the activities listed with what is generally agreed upon as a well rounded program of special class teaching. This was done because we felt there was danger that the activities we had gathered might not represent a well balanced offering. No other kind of checking was carried through but we believe it would be advantageous to check against research studies of subject matter content. A question will arise, however, as to how far one should be influenced by statements of objectives or results of such studies.

Further Experiment Sometimes Needed

When the results of these studies show radical divergencies from present practice they should be made the basis of further experimental work in the classroom before they are incorporated in a course of study.

Our large summary sheets were reviewed again and this time two types of activities were noted: (1) those that could be carried on by all groups and (2) those restricted to a certain group or groups. Such activities as dramatization and certain phases of music can be carried on by all groups at the same time but involve somewhat different responsibilities for each group. Such activities as word drill and problems in buying must be restricted to one or at most two of the groups above described.

Another question arose in regard to an appropriate organization for these activities. There is a tendency the country over, and somewhat marked in the special class, to destroy traditional subject matter divisions. Therefore the material was reviewed from this angle. Those activities were noted that could not be taken away from the old subject matter divisions. Also, those activities were noted that could be taught in divisions that cut across the old lines. In the latter, we were led to consider units of instruction that are similar to projects. Because the term "project" has had various connotations we have not used it in this study. The activities retained in subject matter divisions are mainly of the formal drill character such as are found in reading, arithmetic, penmanship and possibly spelling.

Perhaps I should insert a word of explanation as to the difference that is intended between the terms "activities" and "divisions." A division is a larger, more comprehensive unit and indicates all the material used in a well defined, organized unit of teaching. An activity, as the term has been used in this paper, is a subdivision of the division. For example, in a division devoted to a study of household pets, one activity might be the sheltering and care of a pet at the school.

A study of our larger summary sheets and of the original teachers' reports gave some clews to the divisions that could be organized and the activities belonging in each division.

Some of these activities were integral parts of divisions following traditional subject matter lines, but others were parts of divisions that cut across these lines. It seemed to us desirable to break away from traditional subject matter organization. Therefore the activities that had been so organized were placed in new divisions representing practical interests or needs of the special group rather than logically related subject matter. In addition we found some activities that had not been organized into larger units. These were organized into divisions even though they had not been suggested in the original material. Thus some of the divisions in our completed course of study have been suggested by the material gathered from the classroom, but some have been organized out of activities found in the classroom but organized by the teachers in other ways.

Organization of Divisions Shown

The question has arisen in regard to the form of organizing the division. Our plan is, first, to give a title to each division indicating as exactly as possible its aim and scope; second, to list the activities included, and third, to describe for the teacher a method of conducting the division. The organization of these divisions constitutes our next step.

We expect the completed product to be a course of study that will be an advance over present average practice and can be put into immediate use by the classroom teacher. By encouraging teachers to work out new materials of instruction and later repeating the procedure just described we can provide for future revisions.

I believe this procedure has the following advantages:

1. It starts with a study of present classroom practice, thus recognizing and capitalizing the teacher's creativeness and the lesson planning she has been obliged to do in order to carry out her ideals of teaching in a concrete situation.
2. It presupposes that teaching is essentially more than mechanically following an outline.
3. It views the course of study as a whole, thus assuring better integration and consequently greater educating power.
4. It is essentially scientific, in that it provides for a critical examination of subject matter.

Arizona Grammar School Shows Value of Unit Plan

Many economic and educational advantages claimed for unusual ground arrangement and construction of huge grade-school plant comprising thirty-four single classroom buildings

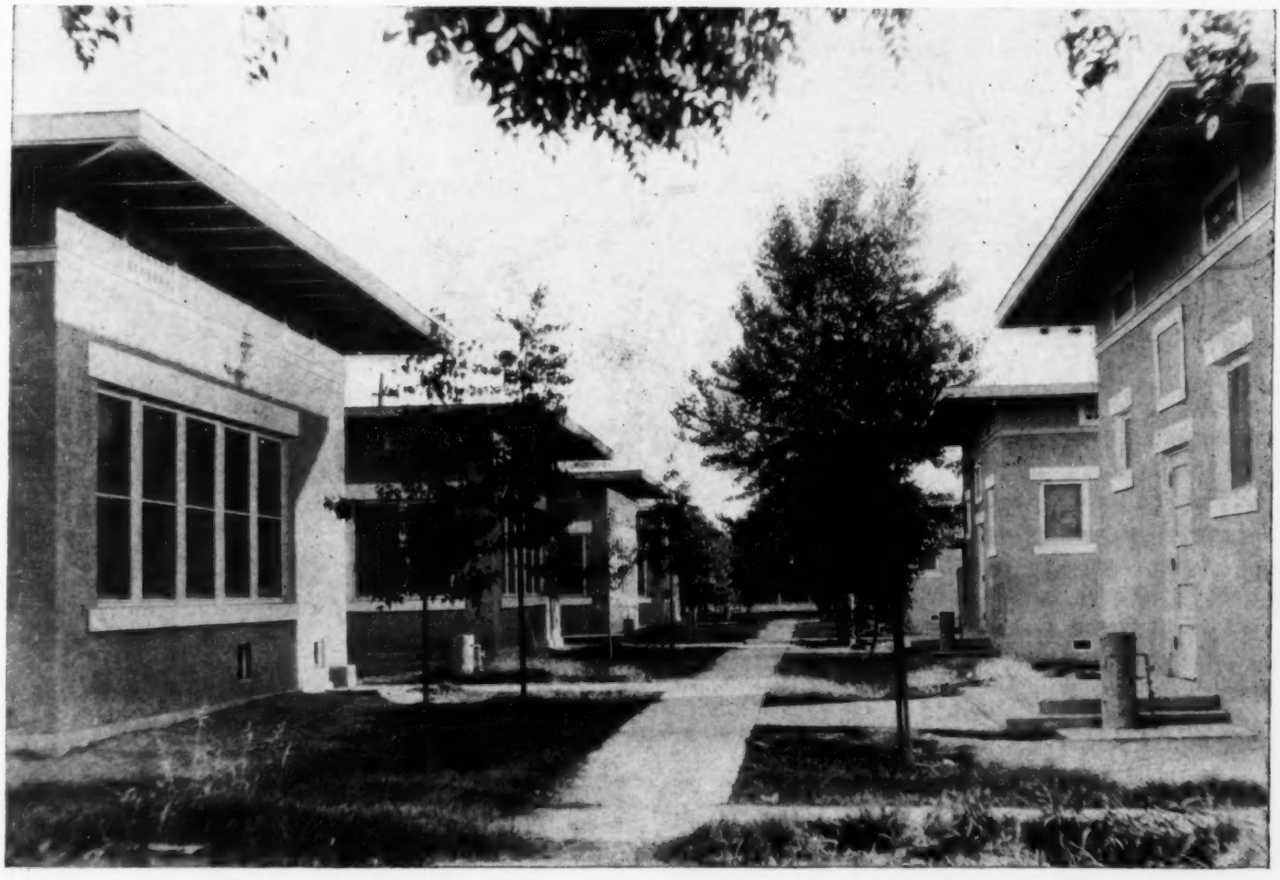
By HAROLD W. SMITH, Superintendent of Schools, Glendale, Ariz.

THE Glendale Grammar School, Glendale, Ariz., comprising thirty-seven buildings, extensive playgrounds and spacious lawns covering a tract of twenty-three acres, probably is the largest educational plant in the world built according to the unit system.

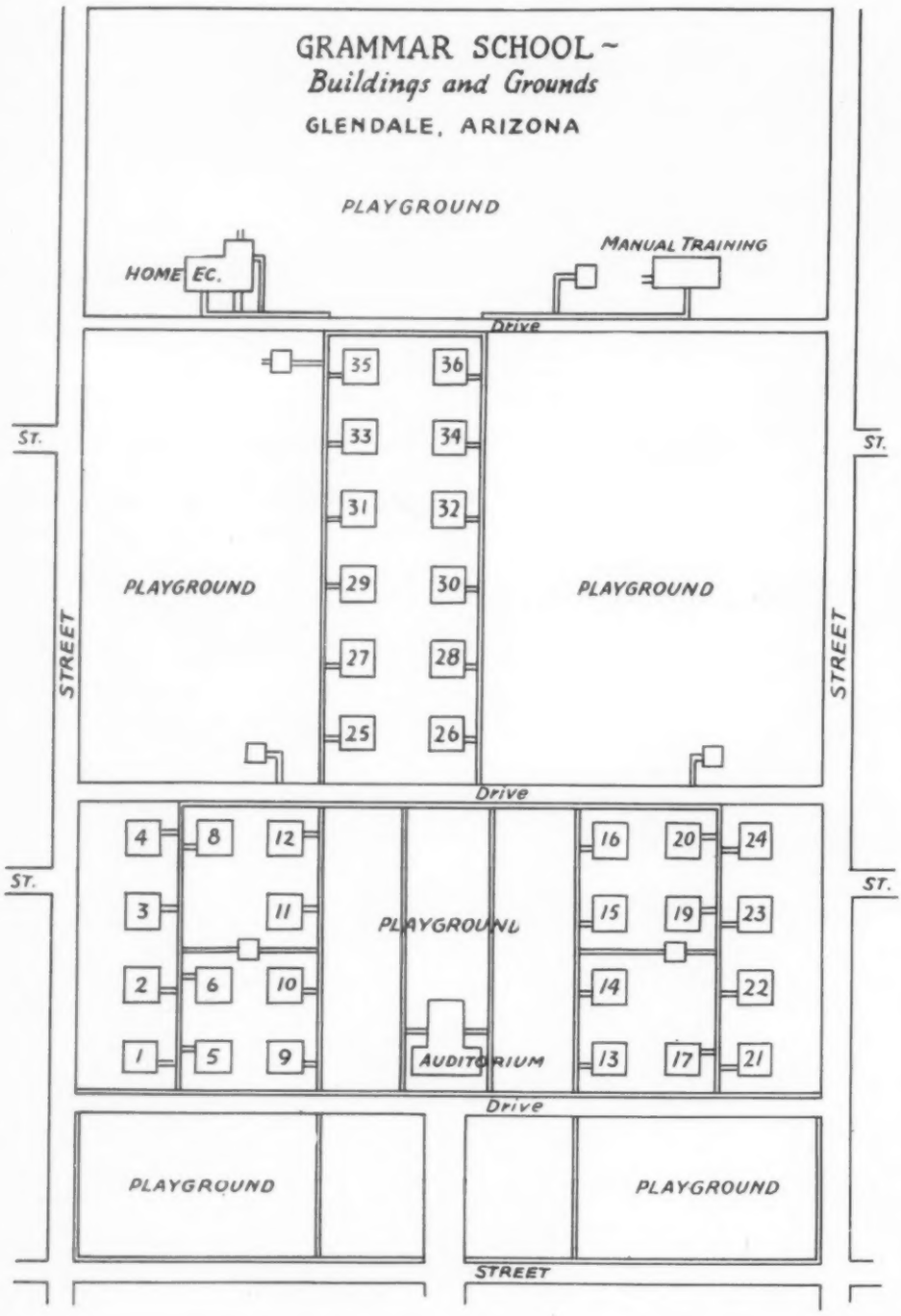
Thirty-four of the thirty-seven buildings are structures consisting of a single classroom called a unit building. In addition to these class units there are three larger buildings—an auditorium seating more than a thousand persons and providing ample space for office rooms, storerooms, library and music room, a home economics building for the sewing and cooking classes and the hot lunch service, and a manual training building.

The unit plan of construction appears to have certain advantages over the usual type of construction providing for larger buildings containing a number of classrooms under one roof. Some of the advantages may be briefly mentioned as follows:

1. Lighting. Since the unit building consists of a single room it is possible to bring unobstructed light from any direction desired. All of the classrooms are lighted from the west and north. Since the pupils face the east in all rooms this brings the light from the rear and left side, considered an ideal arrangement by authorities.



A glimpse of one of the school "streets," showing two rows of classrooms back to back.



Ground plan showing how the buildings are grouped.

2. Ventilation. Having four outside exposures the problem of obtaining ample fresh air for the unit buildings is simplified. They may be ventilated by doors and windows from three sides and the fourth side is provided with special ventilators. In addition, there is ventilation by means of an opening through the ceiling and through ventilators placed near the floor, which are never closed even in the most severe weather.

3. There are no corridor disturbances such as are more or less unavoidable in large buildings when numbers of pupils are passing in or out.

4. There is no disturbance from adjoining rooms such as is to be expected when only a single partition separates the rooms.

5. Much time is saved in getting into and out of buildings. Generally speaking the children play in close proximity to their respective rooms.

6. The fire hazard is reduced to a minimum. Since the buildings are steam heated there is little danger of fire in any except the three larger buildings. The unit buildings are spaced at sufficient distance from each other to give protection to the other buildings should fire break out in one. Doors all open to the outside.

7. The building plan is flexible. It is possible to add one or more unit buildings to one of the groups at any time without disturbing the architectural plan.

8. The cost of constructing the unit building is much less per room as is shown by an investigation of costs comparing the entire cost of eight unit buildings with the cost of single buildings consisting of eight rooms under one roof. It was found that the cost per room was only about two-thirds as much as the cost per room in larger buildings.

9. The pupils of various departments are more easily segregated, lessening the probability of spread of contagious or infectious diseases.

All buildings are constructed of pebble-dashed brick or concrete block, with the single exception of the frame home economics building.

The unit buildings are placed in separate groups on three sides of the auditorium building which serves as a central unit for general assembly. A group of eleven unit buildings west of

Glendale Grammar School as seen from the auditorium.

the auditorium provides space for the kindergarten and first and second grade classes. Eleven buildings east of the auditorium house the third and fourth grade classes. These two groups of buildings are identical in plan and arrangement with respect to the auditorium building. Twelve unit buildings north of the auditorium are occupied by the classes of the fifth, sixth, seventh and eighth grades. The home economics and manual training buildings are placed near those used by the seventh and eighth grade pupils.

With the exception of the space occupied by the buildings, a tract of twenty-three acres is devoted to driveways, walks, lawns and playgrounds. The school is thus fortunate in having ample space for the program of playground activities carried on under the supervision of the teachers. Baseball fields, basket ball and tennis courts and space for track and field events for all the children are provided. A general program of athletics and other playground activities is carried on constantly under the supervision of the teachers. Interclass games and contests and frequent games and tournaments with other schools provide the basis for a program of playground activities in which all the children have opportunity to participate. The playgrounds also are equipped with devices for exercise.

The faculty at present includes thirty-two teachers. A minimum training such as that given in the regular two-year normal-school course or its equivalent is required of all teachers in the system. As a matter of fact, the teachers, on the average, have had three years' training above high school. The average period of teaching experience is eight years, four of which have been in the Glendale School. This long service in the school definitely indicates two things—first, that the working conditions in the school and living conditions in the community are satisfactory to the teachers, and second, that the quality of service given by the teachers to the community is satisfactory.

School Maintains Special Departments

In addition to presenting the minimum course of study as required by the state, various special departments are maintained by the school. Some of these are mentioned briefly as follows: (1) a kindergarten for children between the ages of five and six years; (2) home economics, including cooking, sewing and general homemaking instruction for girls of the seventh and eighth grades; (3) manual training for boys of the seventh and eighth grades; (4) a health program providing instruction in general health knowledge and in the formation of proper health habits; (5) public-school music instruction for all pupils and band and orchestra instruments for pupils of the seventh and eighth grades; (6) a program of athletics and directed playground activities, including all the pupils under the supervision of the teachers; (7) a lunch service which provides hot food to about 350 children each school day.

The auditorium, one of the three large buildings in the group.

Planning a School Program Premised Upon Child Growth

The traditional view of the educative process is changing as the child rather than subject matter becomes the foundation stone on which teaching is based

By FRANK G. PICKELL, Superintendent of Schools, Montclair, N. J.

THE place of the principal and of the supervisor in the development of any type of school is important and vital. The place of the teacher is of equal importance. This statement, of course, needs no defense. But the shift in emphasis from subject matter considered valuable and essential in and of itself, to the needs, interests, experiences and possibilities of the child as the chief determining factors in what should be taught, has gone so far that the situation calls for a new, broader and clearer view of the educational program flowing from child growth.

The Child As an Educational Foundation Stone

It perhaps is sufficient to say that in accepting the child rather than subject matter as the foundation stone for the newer education, we have set sail upon a hitherto uncharted sea. Subject matter has the advantage of tradition. It has been taught for centuries, some of it at least. Children, say the conservatives, the formalists, should be taught this material. Others have been taught in this manner; it has been good for them; why question its value? Should we not strive to find the most effective means of teaching this material, rather than try to reach the child, yes, educate him, through his experiences, his needs, his interests, his initiative, his power of self-expression? We do not have tradition or sufficient experience to guide us in the educational program that should flow from the consideration of child growth as the most important factor in the educative process. The difference lies in the point of view and therefore in the approach to the child.

It may be stated that those who believe in this new type of school, believe also that all the subject matter that means anything to the child or that will be valuable in his development will be taught in such schools and taught more effectively than in schools that worship at the sacred shrine of subject matter, good for one, good for all.

I speak of this conflict in viewpoint because it presents the first and most difficult problem in the reorganization of American public-school education. Its existence puts professional leaders on the defensive to the extent that their schools hold the traditional adult view of the educative process. I speak of and emphasize this conflict because about us this very day a revolution is going on in American educational practice. The best of the experimental schools and a few of the public schools are setting up interesting, and in some cases, radical experiments in daily programs, in units of work, in provision for child activity, in freedom, in use of materials, in variety, in self-expression. They have broken with mass instruction and have established curricula and daily programs that are a direct contradiction to the rigidity and standardization usually found in the public schools.

School Children Still Shackled

For some twenty years we have lived in the swirl of statistics, pseudoscientific and really scientific experiments, all pointing, to some extent at least, to child growth as the dominant, controlling motive of education. For two decades we have rolled off our tongues educational theories and beliefs as to the needs of the individual child, yet in the most of our public schools youth is still shackled. Fixed furniture, teacher dominated and disciplined class groups, teacher made programs, subjects allotted distinct and separate small parcels of the school day, listening pupils, teacher controlled activities, formal teaching—these are still generally found.

Those who would develop schools premised upon the belief in child growth, child initiative and self-expression recognize fully that there can be no quarrel with those who maintain that such a school, if it does not take into account the adult life and its cumulation of knowledge and facts, is a one-sided school. Of course it is. Adult civilization must be recognized and included in the

program. The conflict arises from the new school's insistence that there is a child life with its experiences and its desires, and that this life is not the same as the adult life. The conservatives, knowingly or unknowingly, make school one-sided by their insistence upon academic instruction with deferred values as the surest, safest and best preparation for adult life, and neglect to make such instruction contribute to the real satisfactions of life.

So much for the conflict itself and the fundamental differences in the two points of view. Those who are interested in a full discussion of the subject should read "The Child-Centered School," by Rugg and Shumaker. This book is replete with theory and example of both the new and the old.

How to Change the Teacher's Viewpoint

Let us assume now that this new point of view has been accepted as the policy of a school system. What course, then, may reasonably be followed in developing such a viewpoint among teachers? This question is not raised for the purpose of commenting upon classroom teachers, but to suggest that creative leadership is the chief responsibility of principals and supervisors.

First, of course, comes the implanting of the new conception of the educative process itself. This calls for conference, professional study and discussion. Teachers' meetings will be necessary, and much reading and planning must be done, but in every school or certainly in every system there will be one or more teachers who by a suggestion now and then will help to develop a program actually premised upon child growth. They have been anxious to experiment and seize the opportunity long awaited. They will want movable furniture; they will make a flexible program; they will give over a fair share of each day to a free activity period; they will have in their room the type of materials long familiar to the kindergarten. Such teachers are invaluable supervisory aids in the development of the new program.

When these teachers have been given the freedom to develop this type of program and have been supplied with the materials, they should be used as living examples. Visitation to the schools where they teach should be made possible, and the program thus simply begun will find new roots throughout the system. It will break out in spots. However it is necessary to mention that jealousies may creep in and the supervisor will need to keep constantly before the teachers the importance of a high professional attitude.

A word is in place as to equipment. No such program can be carried out with the old type of fixed furniture. Nor can it be made successful by replacing thirty-five screwed down desks with an equal number of movable desks and chairs, all of the same general size and type. The principal and the supervisor will need to give this subject full consideration. Here as elsewhere in the program, suggestion and study rather than dictation should be the basis of change.

The room should have enough chairs to seat all the pupils. It may well have just enough tables for about one-half the class. Some of these should be single desks, others, long tables, still others, library tables. The children in such a room will have floor space for their self-initiated activities and their class projects. There should be a work bench and tools, clay for modeling, blocks for building, a quiet attractively furnished corner for reading, paints and an easel for creative art work, books within reach of the children, nature study material and aquariums.

The second step in the supervisory technique requires the development of a practical plan for group teaching. This does not mean individual instruction, but at times it may be just that. Reading, for example, will be taught in groups and in accordance with the tastes of children. The pupils will be encouraged to read a variety of books, not one book together. Art becomes creative, rather than logical. The child draws, and as he draws the teacher leads him on.

New Technique Is Necessary

Group teaching leads, of course, to a consideration of the whole rigid scheme of time allotments for subjects. It brings into question the marking of pupils, the graduation of pupils and semiannual or annual promotions. A supervisory technique to coordinate the work as the child passes from one level of attainment to the next will need full consideration. These issues must be met by the supervisor in freeing the teacher to adopt class projects and to make the needs of children and their interests the controlling factors in education. The teacher must be free to use the facts of adult life. Her children, say, are studying community life. They measure—they add, they compute distances, they study directions; they study foods—their source, their distribution, their cost; they study geography; they look into the industries that make the food supply possible; they study sanitation and so on. All this must be made clear through a technique concerned with the freeing of the teacher and the interrelation and utilization of adult knowledge as indispensable factors in child growth.

One of the chief objects of the new education is to teach children to work with one another, to

replace unnecessary rivalry among pupils with cooperative endeavor through the substitution of class or group projects. This fact points to another difficult task before the principal and the supervisor. These leaders must be concerned with the organization of teaching materials in terms of large units taught by the project method.

The organization of materials on a general basis, but not in advance, at least not in detail in advance, of necessity calls for checking, testing and retesting, by use of standardized tests, those knowledges and skills needed as the child passes on to more complex activities. There is now, practically speaking, a sufficient number of scientific studies to show to what extent we should teach spelling, arithmetic, elementary reading and so on, and the provision that must be made for repetition of isolated facts. The supervisor will need to make use of these aids.

The supervisor may also make use of a simple form upon which the teacher can chart the growth of the individual pupils, and she should have at her command experts in emotional behavior, all with the idea of focusing the mind of the teacher upon the individual child and above all upon his growth.

There are weaknesses, to be sure, in this newer type of education. It is necessary as we go along to marshal our brain power and our research facilities to discover these and correct them. Again I may say that those who accept the child as the controlling motive in education are sailing a practically uncharted sea.

Humanizing Education Through Research

Research is the means that provides a continuous self-survey, according to M. R. Keyworth, superintendent of schools, Hamtramck, Mich. The school organization within itself can check its own progress, can discover its mistakes, can direct its changes and adjustments and can have the evidence to justify what it is doing. Mr. Keyworth points out that the whole subject of keeping records of the various activities within the school system, of discovering high spots and low spots, of encountering problems and obstacles and of discovering means for improvement, constitutes the field of records and research. Research is a vital part of each activity. It is not something to be administered from without. Ability to carry on research should be part of the equipment of each agent in his particular activity.

Industry has recognized the value of research and educators can learn from industry some valuable lessons in the uses to be made of research. Records and research do not dehumanize education, but do discover how human beings should be treated because they are human. Research and experimentation are the very means by which remarkable progress has been made in the humanization of education during the past twenty years.

A New Joist That Eliminates the Squeaks From Schoolhouse Floors

Many persons who have had experience in small schoolhouses built in the era of wood floors and wood joist construction will confirm the experience of a prominent school superintendent who remarked in a discussion at a recent N. E. A. convention that "for some inexplicable reason, schoolhouse floors are capable of producing more varieties of squeaks per square foot than any other structure so far produced by man."

A new device that eliminates the squeaks—a steel joist with a wood nailing screed embedded in its top member to which rough wood flooring can be nailed directly—has been developed and is now being manufactured. Heretofore, when steel joists were used it was necessary to lay a slab of concrete over the joists, and wood flooring might be placed over the concrete if desired. The new joist greatly reduces construction costs by eliminating the necessity of the concrete slab.

The joist not only takes out the squeaks, but it eliminates the cracking of plaster and the development of cracks between floors and partition walls caused by shrinkage of wood joists. When it is used in combination with metal lath, plaster cracks are practically eliminated altogether. The device is of simple design and consists of two main steel members joined by a continuous web member formed into a Warren truss. Thus great strength and rigidity are combined with light weight and low manufacturing cost.

Use of these steel joists as substitutes for the old type of wooden joists reduces the fire hazard in schools. Metal lath can be easily attached to the lower chords of the joists and this, when plastered, produces fire resistive ceiling under each floor.

A special joist adapted to roof construction also has been developed for use in buildings where wooden plank roof decks are erected. This permits the usual rigid steel building structures, the roof planks being nailed directly to the wooden members in the joists. A light-weight metal roof deck is also made for use under insulation and waterproofing to give positive fire resistive construction to roofs on schools and other structures.

The Playtime of a Million Girls or an Olympic Victory—Which?

With the Olympic Games but three years off, leaders in physical education are asking, "Shall the spirit of wholesome play for all girls be sacrificed to developing the superior prowess of a few?"

By BLANCHE M. TRILLING, Director, Physical Education for Women, University of Wisconsin

THE question of the competition of women and girls in the next Olympic Games to be held in Los Angeles in 1932 was the chief topic of discussion at the meeting of the women's division of the National Amateur Athletic Federation in New York last January. The reporters who went to the meeting expecting an autopsy of the recent Olympics, however, were disappointed.

The women's division indulged in no accusations of unfairness, no debate about the tactics of men coaches for women athletes or whether the girls from America had been properly looked after in Amsterdam. Instead, the members attempted to consider the matter from the standpoint of their own expressed ideals. How far could an organization having for its motto, "A team for every girl and every girl on the team," support a policy which meant a systematic combing of schools, colleges and clubs for girls to be built into a small squad of victors?

The answer to that question they embodied in no uncertain terms in the following resolution:

"WHEREAS competition in the Olympic Games would among other things (1) entail the specialized training of the few, (2) offer opportunity for the exploitation of girls and women and (3) offer opportunity for possible overstrain in preparation for and during the games themselves, RESOLVED that the women's division of the Na-

The many instead of the few derive wholesome benefit through such games as push ball.

tional Amateur Athletic Federation go on record as disapproving of competition for girls and women in the Olympic Games."

In this connection it may be well to ask, "What authority has the women's division of the National Amateur Athletic Federation?" The division was organized in 1923 when, at the invitation of Mrs. Herbert Hoover, a group of leaders in physical education and of experts in girls' work met in Washington for a conference on athletics and physical recreation for girls and women. These leaders found that although the physical superiority of boys to girls, once they were past adolescence, prevented competition between the two groups, the tendency was strong for schools to copy the methods of boys' athletics without considering whether or not they met the needs of girls.

Standardizing Agency Needed

This unthinking imitation led to many discrepancies in practice so that teachers and leaders were often puzzled by the lack of standard usage. Consequently their work was hampered by the failure to relate girls' athletics directly to the end for which they were working—the health and well-being of the girls in their charge. A central agency was needed to formulate standards and "to serve as a national research body and clearing house for all problems of athletics and physical recreation for girls and women."

To achieve this end the women's division of the National Amateur Athletic Federation was organized and a convention called to meet in Chicago the Spring of the following year. At this meeting the members of the women's division adopted a platform and decided upon a plan of action. Now at the end of five years, the division numbers among its members and endorsers more than twenty national organizations, including the National Council of Parents and Teachers, and nearly a hundred and fifty leading colleges and universities, schools of physical education, normal schools, state departments of education, city school systems and private schools for girls, in addition to a number of individuals that represent still other organizations. The platform begins by saying that "The women's division . . . believes in the spirit of play for its own sake and works . . . for conditions that foster health, physical efficiency and the development of good citizenship." The first paragraph after the preamble pledges the division "to promote programs of physical activities for all members of given social groups rather than for a limited number chosen for their physical prowess."

Now, a limited number chosen for their physical prowess and rigorously trained during the intervening three years is precisely what is required if this country is to enter a winning team at Los Angeles in 1932. Are such selection and training compatible with the ideal of the women's division: "A team for every girl and every girl on the team"?

Every director of games finds it difficult to teach the girls who need it most to play heartily and spontaneously. Such girls ordinarily have little aptitude for the game, and it is hard to overcome a dislike for a thing that one does badly. The teacher herself has to fight a natural tendency to pay more attention to those who play the game well, who swim with a powerful stroke, who run or jump in excellent style—in short, to those who can be developed into creditable performers. And this temptation, insidious and constantly reinforced by arguments that are prevalent concerning the competitive athletics of boys, will be irresistible if she has a specific contest before her.

Imagine the effect, then, of a determination to find all the best women athletes in the United States and to see that every girl who can run or jump or swim or fence is trained rigorously, at least through the regional tryouts. What chance will there be for physical activities for all the girls in the school? Hours of wholesome play will be converted into trials of skill during which the weaklings will be eliminated.

Conscientious teachers will undoubtedly try to keep the whole group interested, but what chance have they? There is the problem of time and playing space. The swimming teacher wishes to continue with the regular program of classes and games, yet the pool is small and, because it must be shared with the boys in the school, it is only available two or three afternoons and evenings of the week. Handling large classes is a matter of nice adjustment, yet the squad must have daily practice before it is ready even for a dual meet with another school. After that come state and regional tournaments that entail still more rigid drill.

Training Disrupts Schedules

This, however, is not the greatest danger. Granted that time and equipment are ample and that teachers are alive to the situation, the demands of a championship team will continue to disrupt all ordinary schedules. School spirit will be aroused. Principals and head masters will insist that, when once their pupils are entered in the contest, it is folly not to do everything possible to win. Superintendents of schools will be caught by civic pride and urged on, often against

Vigorous and enjoyable exercise is afforded by this kind of play.

their better judgment. The girls whose play hours are sacrificed will clamor for longer hours and more coaching for the team. There is no escape. If schools and clubs encourage competition in the Olympic Games, the facilities provided to ensure the physical fitness of all school girls will be devoted to developing the superior prowess of the few.

Seeks to Prevent Exploitation

The women's division aims "to protect athletics from exploitation for the enjoyment of the spectator or for the athletic reputation or commercial advantage of any institution or organization." Extensive competition, such as the selection of an Olympic team would involve, cannot avoid contests to which the general public is invited, sometimes to satisfy aroused public interest but more often to raise money to pay for the contests themselves. The general public likes and is willing to pay for the excitement of vicarious contests. Thus the spectator becomes more important than the contestant, and his insistence on victory at all costs makes of the contest a gladiatorial show in which the players are pawns in the battle of experts behind the lines, and in which the play spirit of the girls is completely destroyed.

As for the tournaments, they are endless. Every girl who represents the United States in the Olympics must first pass through the elimination contest of her club or school, then the state and regional contests and, finally, the national tournament. Nor is this all. Of two candidates equal in other respects, the one who has taken part in the most public competitions is said to have the advantage. Consequently the girl must seek opportunities to compete. These will be afforded by invitation matches, school and college tournaments and even civic carnivals of which a few may be said to be held in the interests of the sport but with the greater number frankly an advertisement of the school or community that stages them. All, or nearly all, however, will try to make these contests self-supporting by charging admission.

Commercialization Spoils Play

Thus when commercialization enters, the spirit of play will disappear from women's athletics. Under the compulsion to win at all costs, beauty and grace of movement will give place to grotesque striving after the last ounce of muscular strength. But, some will argue, think of the wide publicity that women in the Olympics will give to the athletic program for women. What kind of publicity? Will it stress the sport rather than the individual or group competitor, or will it

rather throw the limelight upon the girl who wins?

Athletics for women needs no advertisement. Fitness in women no less than in men is the *sine qua non* of modern life and physical exercise is recognized as its most efficient cause. The girls in China, in Turkey, even in jealously secluded Afghanistan, are playing volley ball and soccer. The term "tomboy" is becoming obsolete, not because of the disappearance of the type but because it is accepted as normal. The danger is rather that athletics for women will get the wrong sort of advertising from the Olympic Games and that a new portent, the athletic star, will effectually discourage general participation in games by calling attention to the few who can win championships.

Claim Strain on Health Is Dangerous

Another reason for opposing the inclusion of women and girls in the Olympic Games is that competition "offers opportunity for the possible overstrain in preparation for and during the games themselves." The women's section of the American Physical Education Association is more outspoken. It unreservedly condemns formal spectator athletic contests in any activity for women because of their effect on health and character, and declares that unless and until scientific research establishes the harmlessness of such contests, it will oppose them.

This fairly states the physiological question. Structural differences between man and woman undoubtedly make the woman inferior in muscular power and in certain kinds of activity. How far these and certain functional differences unfit her for extreme muscular effort no one knows with scientific exactness. Physicians have made observation and some beginnings of experiment, but its interpretation is in doubt because it is too largely the work of prejudice and not sufficiently based on ascertained fact. On the one hand are the feminists ready to fight for the belief that woman is not essentially different from man and that physical inferiority that seems due to structural differences will disappear after several generations of freedom from taboos. On the other hand, traditionalists hold just as strongly that "Woman is not undevelopt man, but diverse," and that she not only makes herself ridiculous and unwomanly by taking part in man's sports, but that she runs a grave danger of injuring her health. The last Olympics, by the way, are cited by both sides as proof. One side declares that statistics show that the competition of girls and women had no bad effect, with due consideration of their condition at the time; the other says that informed opinion abroad was shocked at the strain the girl athletes underwent in the Olympic Games at Amsterdam. The women's division does not take sides but contents itself with the eminently sane position of refusing to sanction a form of sport that is under medical suspicion.

No such difference of opinion exists about the emotional reaction of girls to a contest. Whether their emotional instability is temporary and will disappear when men and women are treated alike, or whether it is fundamental, all agree that at present it does exist. Girls are habitually more excitable, more sensitive to opinion and more likely to give expression to emotional upsets than boys are. The adolescent girl in particular is difficult. In some respects, like the boy, she is "herd-minded" and in others she is individualistic while the boy tends to go with the crowd. She is overjoyed when praised and correspondingly cast down when blamed. She is likely to take the decisions of a coach or an official in the game as personal. Either she takes the game with deadly seriousness—a fault hard to remedy when she knows that she is on exhibition and that on her playing depends the reputation of her school—or she treats it with regrettable flippancy and is likely to refuse to play when much is at stake unless the game affords her a chance to pose as an athletic type, a bathing beauty or even as a clown.

Other Groups Voice Protest

These then are the reasons advanced by the women's division for opposing the participation of girls and women in the Olympic Games, a position in which they are fully supported by affiliated organizations and an imposing number of educators and authorities on amateur athletics. It has seemed to such educators calamitous that their sane athletic program should be jeopardized by some zealous but shortsighted people who, aroused by the indifferent success of a few American women in the last Olympics, are now advocating a thorough canvass of our schools and an immediate beginning of training for an American victory. One victory in 1932 won by a handful of American women seems too dearly bought if it involves even the partial sacrifice of the playtime of a million American girls.

Until there are ample playgrounds and gymnasiums in all schools and until every girl has the fullest opportunity to engage in athletics, let the schools conserve their energy and money instead of spending both on a form of sport that is, at best, of doubtful value. Let them choose rather to build up a kind of athletics that will realize the ideal of the women's division—"A team for every girl and every girl on the team."

Relating Promise to Performance in the Field of Education

The tendency in education appears to be to confuse mere experiment with actual accomplishment, or in other words to accept without attempting to prove the dogmas of educational experimenters

By P. W. HORN, President, Texas Technological College, Lubbock, Texas

"JUNIOR College Declared Best for Freshmen," is the way one newspaper recently headed a story dealing with the merits of the junior college for the young high-school graduate. In this instance the headline gave an exact statement concerning the facts in the main article. The significant word in the headline was "declared." The writer of the article made the positive assertion that the junior college of today is the best kind of a college to which freshmen can be sent. What the readers of the article may not have been aware of was the fact that other articles have been written recently in which the writers declared with an equal degree of positiveness that the junior college is not a good place to send freshmen.

It is equally easy to make assertions on one side or the other. The value of such assertions, if any value there be, depends largely upon the intelligence and the familiarity that the men who make the assertions have with their subjects. Is it easier to make unsupported assertions and harder to check up on the value of such assertions in the educational field than in any other? Is the tendency to take seriously unsupported assertions increasing?

Prone to Accept Unproved Statements

If some medical authority were to make the assertion that coal tar, properly applied, is an infallible remedy for tuberculosis, thousands of physicians the whole country over, would be quick to try it to ascertain the truth of the assertion. No physician would take such a statement seriously until efforts had been made to prove its truth. It seems that educational authorities should take the same stand, but that does not appear to be the case.

Some years ago when a survey was made of the schools of a certain state, the surveyors asserted positively that the schools of one of the large cities were the best in the state and that those in another large city were among the worst. Well informed school men in the state smiled rather incredulously. They knew the two cities and were familiar with the history of the schools in both. There were others, however, who probably took the survey seriously and who believe to this day that one city has good schools and the other one has poor schools, merely because those who made the survey said so. In the same survey, the statement was made that in the schools of one city the course in English was not up to standard. The exact fact was that the course in English did not meet the approval of the persons who made the survey.

Educationalists Experiment Too Little

In the minds of the general public, including perhaps a great many persons engaged in the profession of teaching, there is no clear-cut line drawn between the field of experiment and the field of accomplishment. A scientist will perhaps try thousands of experiments before he announces that a single one of them has been successful. It is said that when Luther Burbank was undertaking to develop the spineless cactus, he planted and raised literally millions of cacti before he found one of the kind he wanted. The danger is that in educational plantings it is often assumed that the very first plant that appears is the one that is wanted.

It is perfectly right and proper that every teachers' college should have its department of educational research. It is equally right and proper that every city school system should have its department of educational experimentation. It is altogether wrong, however, that mere experiment or seeking after the truth should be confused with actual accomplishment.

Doctor A, or perhaps Doctor B, of a famous Eastern university is employed by the school administration in a given city to tell the teachers what they should do in regard to certain matters of school organization. This fact is widely heralded as an illustration of the progressive atti-

tude of the school system of that city. It never seems to occur to anybody that it is at least possible that everything Doctor A or Doctor B says may be wrong. It is undoubtedly true that he is telling the teachers to do things that he believes to be right. It is also true that the scientific attitude would be to put his advice into effect to see how it actually works.

Superintendent Smith has been in charge of the school system of a certain city for a good many years. During this time he has doubtless done much good and some harm. Incidentally, he has accumulated a considerable number of enemies, some personal, some political. After a time Superintendent Jones is elected to take his place. At once he makes a number of changes. This is accepted as evidence of his progressiveness. As a matter of fact, it may take many years to know whether or not the changes made by the new superintendent have been in the right direction.

Ways to Prove Truth of Claims

Probably the great difficulty is that the methods used in the educational field to prove the truth of an assertion differ entirely from those used in the scientific field. It is more difficult, for instance, to show that a given device is useful in the field of education than it is to show that a given remedy is valuable in the field of medicine. Nevertheless, there has been at least some progress in recent years in the matter of checking the truth of mere assertion in the field of education. This checking can be done in at least four ways.

The first of these is by the process of actual test and measurement. It may be admitted at once that not everything that is taught in the schools can be submitted to actual measurement. It would, for instance, be quite difficult to measure correctly the extent to which patriotism has been developed in the minds of school children. It is possible that the progress of educational tests and measurements has been delayed because of the extravagant claims that are sometimes made for the system. Nevertheless, the intelligent school man who has been most skeptical in regard to the value of such tests must admit that certain things in the field of education can be measured. Certainly it ought to be possible now to tell whether a certain change in educational policy has improved the spelling, the reading, the writing or the arithmetic of the children of a certain school, or whether their progress has been retarded instead. Before any extravagant assertion as to the value of certain changes is accepted, educators ought to be willing to wait long enough to apply proper measurements to the results.

Then again, there is the matter of the preponderance of authority. In the case of the news story concerning the junior college, if it is worth while to know what one writer declares to be the case concerning junior colleges, it may be still more worth while to know what other well informed writers think. No idea in education, in religion or in politics is so wild or so absurd but that some "authority" can be quoted in support of it. If, however, the majority of well informed writers on the subject believe a certain way, there is at least reason to suspect that there may be some truth in their beliefs.

Still another way of checking is by the mere matter of common sense. In one city the junior high schools have no separate subjects in their curriculum, use no textbooks and assign no lessons. The teachers merely send the pupils to the library and allow them to browse around at random, reading such books as may strike their fancy. This system is pointed to as an illustration of the educational progressiveness of a former superintendent of schools and his university advisers. The results of the system have never yet been accurately measured. Nevertheless, the same type of common sense which looks askance at all "get rich quick" schemes and which believes that in general the profit of any action is not likely to be greater than the energy put forth in performing it, will at least strongly suspect what the measurements of such results are likely to show.

Alumni Show Worth of School

Again, there is the educational test of the ages. It takes a lifetime to show definitely the results of an education. If a small college has been in existence for a hundred years and numbers among its graduates a great many eminent men and women this is the strongest possible evidence that it is a good college. In fact, the real test of a college is to be found, not in its course of study, but in its list of alumni. The same is true of a high school or of a grammar school.

To proclaim that a change is an improvement merely because some person in high educational position has made it, is utterly at variance with the scientific process. Much that has passed for progress in connection with the junior high school and other features of education may prove to be progress in the wrong direction. Our educational progress will be more certain when we cease to call things progress merely because they conform to our own individual ideas. Education will be more highly respected when it takes the scientific position that, although experiment is valuable, real progress must be proved.

How to Measure Educational Standards

The fundamental purpose of the research laboratory is to provide a means for analyzing materials, testing methods and checking output

By A. R. CLIFTON, Superintendent of Schools, Monrovia, Calif.

AMONG recent developments that have tended to improve our schools a prominent place must be given to educational research. By this we mean not only the type of scientific investigation carried on so well in our leading university laboratories, but also the form of research, by whatever name it may be known, that has come to be a part of the practical administrative procedure of city school systems.

In adopting such work the schools are merely doing what business and industrial organizations have long since found not only useful but absolutely necessary. We are analyzing our raw materials, testing our methods and checking our output. The research laboratory in the schools serves the same purpose as the testing laboratory of a tire or soap factory.

Importance of Research Widely Recognized

Large city school systems have recognized the importance of research work to such an extent that there are few if any cities in the United States of 100,000 population that are not equipped with full-time research departments. The functions of the departments vary, as is shown in recent reports by the United States Bureau of Education, and various names have been used to designate them. Their fundamental purpose, however, remains much the same. They are intended to provide a sort of microscope through which the important facts relating to the school system can be brought within the range of vision. The research staff becomes a collecting and analyzing agency for the study of all sorts of problems, and the work meets with a large degree of success when undertaken with the cooperation of the teaching and administrative force.

In the development of such a plan the smaller cities are perhaps at less of a disadvantage than we might think. They cannot, of course, expect to compete with the larger cities in the total expenditures for such work, but by careful planning it seems entirely feasible to make a place for it in any properly organized school system. The need should not be measured by the size of the community. It is proportionally important everywhere.

Our experience in Monrovia has taught us that research work is not only feasible but that we cannot do without it. We have come to rely upon it more each year, and although it has now become so much a part of our regular program that we are hardly conscious of it, we find ourselves taking advantage of its results at critical times when we are most in need of accurate information.

Monrovia is a city of about 15,000 population. It is near the center of a large fruit growing and residential section of the country. Because of its elevation and climatic conditions it is generally conceded to be an especially healthful spot. The community is well governed and there is much interest in public enterprise, including education. The school system includes five elementary schools, a manual and household arts center and a high school. To the high-school district two other elementary districts have been added. The elementary schools carry pupils from the kindergarten through the eighth grade. The high school is of the standard four-year type, accredited by the University of California, and by colleges and universities in the East as well as on the Pacific Coast. A junior high-school organization is under consideration and will soon be a reality. The enrollment for the current year includes approximately 1,800 elementary and 950 high-school pupils.

University Aids In Program

The research program was instituted five years ago through the cooperation of the Teachers College of the University of California at Los Angeles. By securing supervision and direction of the work from the university it was possible to organize the work locally, without the expense

of a full-time department and without the risk of inferior work, which an independent attempt might entail. Dr. J. Harold Williams, associate professor of education at the university, was chosen to plan the program and direct the work. By devoting a portion of his time to our problems Doctor Williams has been able not only to see that our work is carried on in a scientific and economical way, but also to correlate the testing with that of other cities in which he renders similar service.

Assisting Doctor Williams we have one full-time assistant whose duties include the supervision of classroom testing, the giving of individual examinations in special cases and the supervision of our special adjustment classes. We have recently added a part-time assistant for the study of high-school problems. In addition, we have a voluntary research committee composed of representatives of each school, which meets at regular periods throughout the year.

Achievement Survey Is Described

Our procedure may be illustrated by describing our annual Stanford achievement survey. Near the end of the term a day is set aside for this work. Teachers are notified that the test is to occur, but no information is given out as to the form or subjects to be included. On the morning of the test, specific directions are distributed to each principal, with instructions that the completed tests are to be delivered at the research office at the close of school. At this time the volunteer committee undertakes the scoring of the tests and the tabulation of results. At times it is possible to arrange with university classes for assistance in scoring.

When the tabulations are complete, the data for each pupil, each class and each school are arranged on uniform record sheets and combined for comparative purposes. Many of the findings are reduced to graphic form. When the complete report has been submitted to the superintendent a meeting of teachers is called and the findings are explained and discussed under the leadership of the research staff. At this time consideration is given to special problems of promotion, classification and special class assignment which arise in consequence of the test results.

Among the practical uses to which we put this work are the following:

1. Reclassification. When we began our research work we had not yet adopted half-year promotions. After the first survey we felt we were in a position to regrade successfully our elementary schools, largely on the basis of test results. We therefore instituted half-year promotions, with a high degree of success. Teachers, parents and pupils were better satisfied with the more progressive system, and we were sure of each step in adopting the new plan, because we based all decisions on data gathered systematically and scientifically.

2. Reduction of retardation. Our former grading system caused an unnecessary accumulation of pupils in some of the grades, with costly repeated instruction. The new plan immediately reduced the percentage of retarded pupils, and probably saves annually much more than the cost of our measurement work. We now follow our age-grade tables carefully, and have means of keeping all pupils at work nearly in their normal places. Questions of special promotion, demotion and adjustment are now referred to the research department.

3. Organization of special rooms. We formerly had no special rooms and maladjusted children were obliged to take their chances in regular classes, usually with unsatisfactory results. The present method is to refer such problems to the research staff, with authority to place pupils in special classes, if a study of the test results indicate such action is best for those concerned. The length of stay and the return to regular classes are based on later test results.

4. Improvement of classroom instruction. We find that teachers are helped by the research findings not only by the elimination of problem pupils and the better grading system, but also by the systematic standard subject tests and the comparative use of norms for judging their teaching output. Our teachers have learned how to apply statistical methods and to interpret test findings. Such information determines classroom procedure.

Provides Definite Working Basis

5. General improvement. Perhaps the most important thing that a superintendent can say about this type of work is that it gives him a feeling of security which the older, more cumbersome and less exact methods of supervision did not yield. He can go before his board, his teachers or his patrons with evidence in support of procedures and changes that typify the modern school. He can determine, with relatively little expenditure of time or effort, just how his district compares with others in educational standards, and if it falls short, in what respects. He can judge the efficiency of his organization through eyes that are as good and often better than his own, and thus give the major part of his attention to the problems of administration and community service.

Nebraska City Builds Three-Story Addition to Its High School

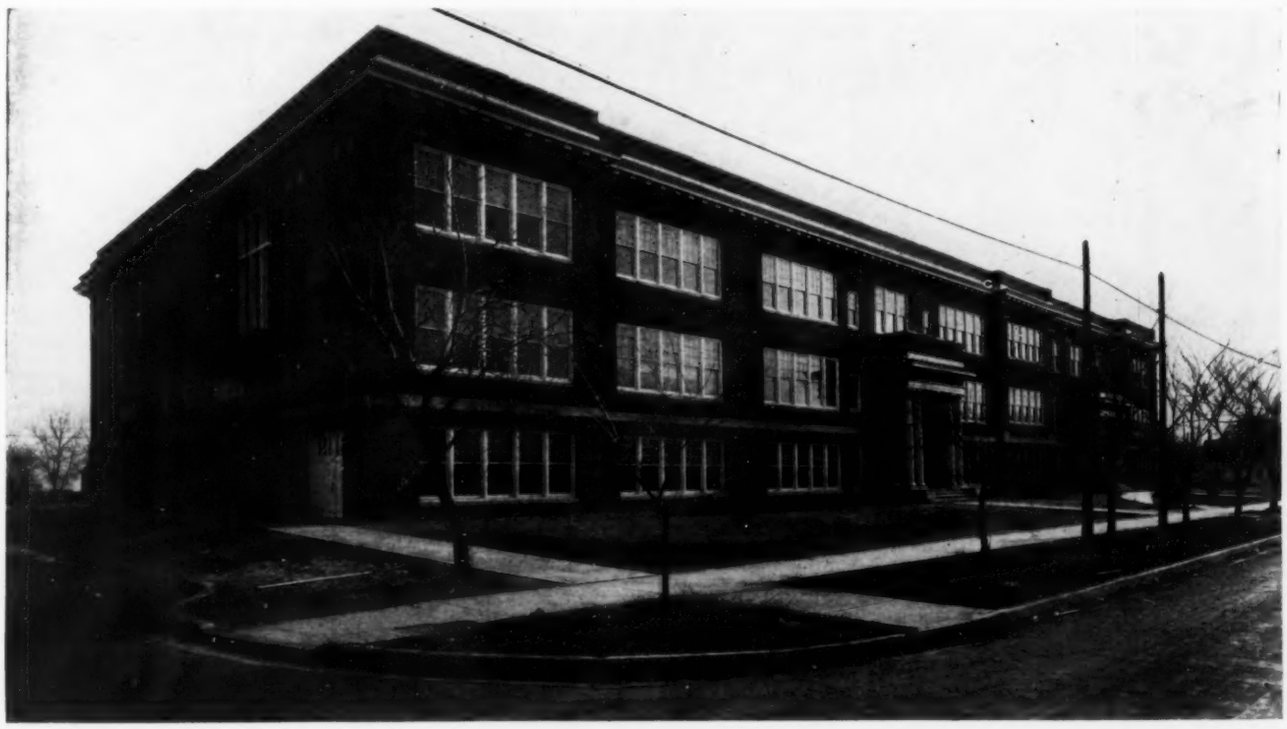
Bond issue of $120,000 *provides for the increasing educational needs of Lexington, Neb., and a structure that incorporates the entire high-school building into one unit is the result*

By JOHN P. HELLEBERG, A.I.A., Architect, Kearney, Neb.

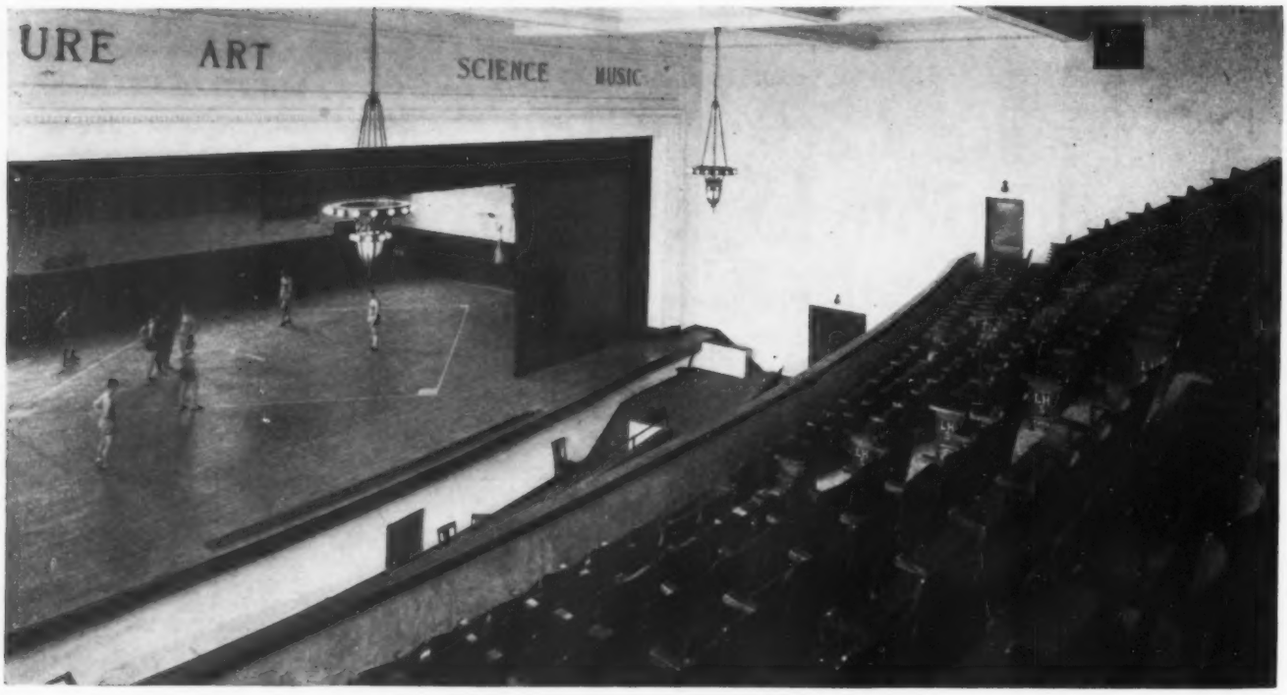
WHEN the citizens of Lexington, Neb., discovered that the high school they had built fourteen years ago was no longer large enough to provide adequately for the education of their children, they floated a bond issue of $120,000 to build a three-story addition to the present high-school building. The addition rather than a separate building, they said, would incorporate the entire high-school building into one unit and would also simplify the problem of heating. The addition is now completed and ready for use.

The auditorium and gymnasium comprise nearly two-thirds of the addition. Nine classrooms and a manual training shop are so arranged that the window grouping in front harmonizes with that of the old building. The corridors of the old building have been extended the entire length of the new building the full length of the school. The addition is provided with three entrances, two for the school proper and one for the auditorium, and is faced with pressed brick, Bedford stone trim and sheet metal cornice to match the old building. The floors throughout are of metal joist and reinforced concrete. The roof is of steel plates with one-inch insulation and five-ply built-up roofing. All floors have green mastic finish except the gymnasium and the manual training shop, which have maple floors, and the vestibules at all entrances, which have promenade tile floors.

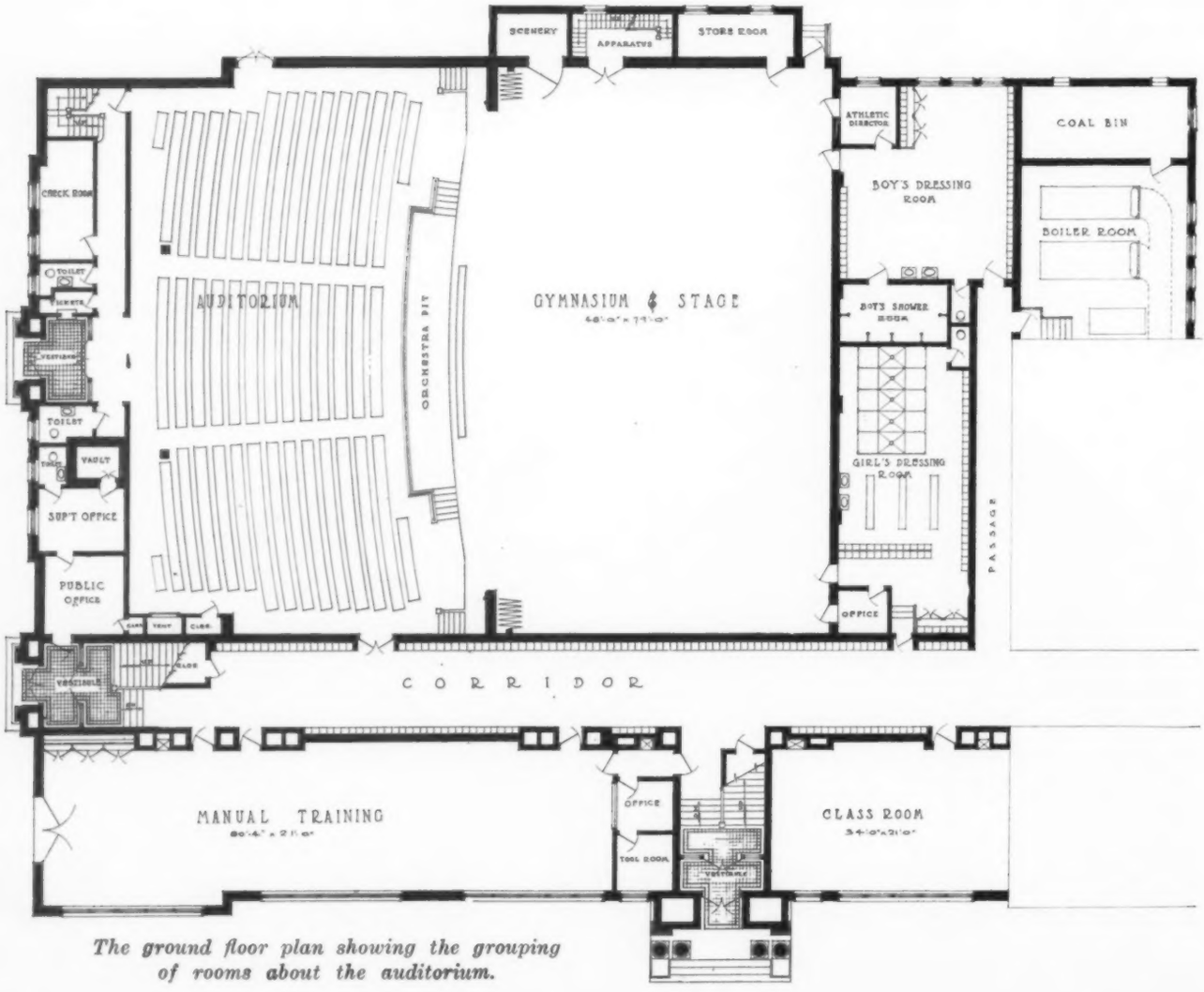
The main stairs are of reinforced concrete with "T" iron nosings. Treads and risers are finished with mastic. Other stairways are of pressed steel construction. All corridors are lined with built-in steel lockers. Individual lockers for teachers are found in each classroom. Toilet rooms have



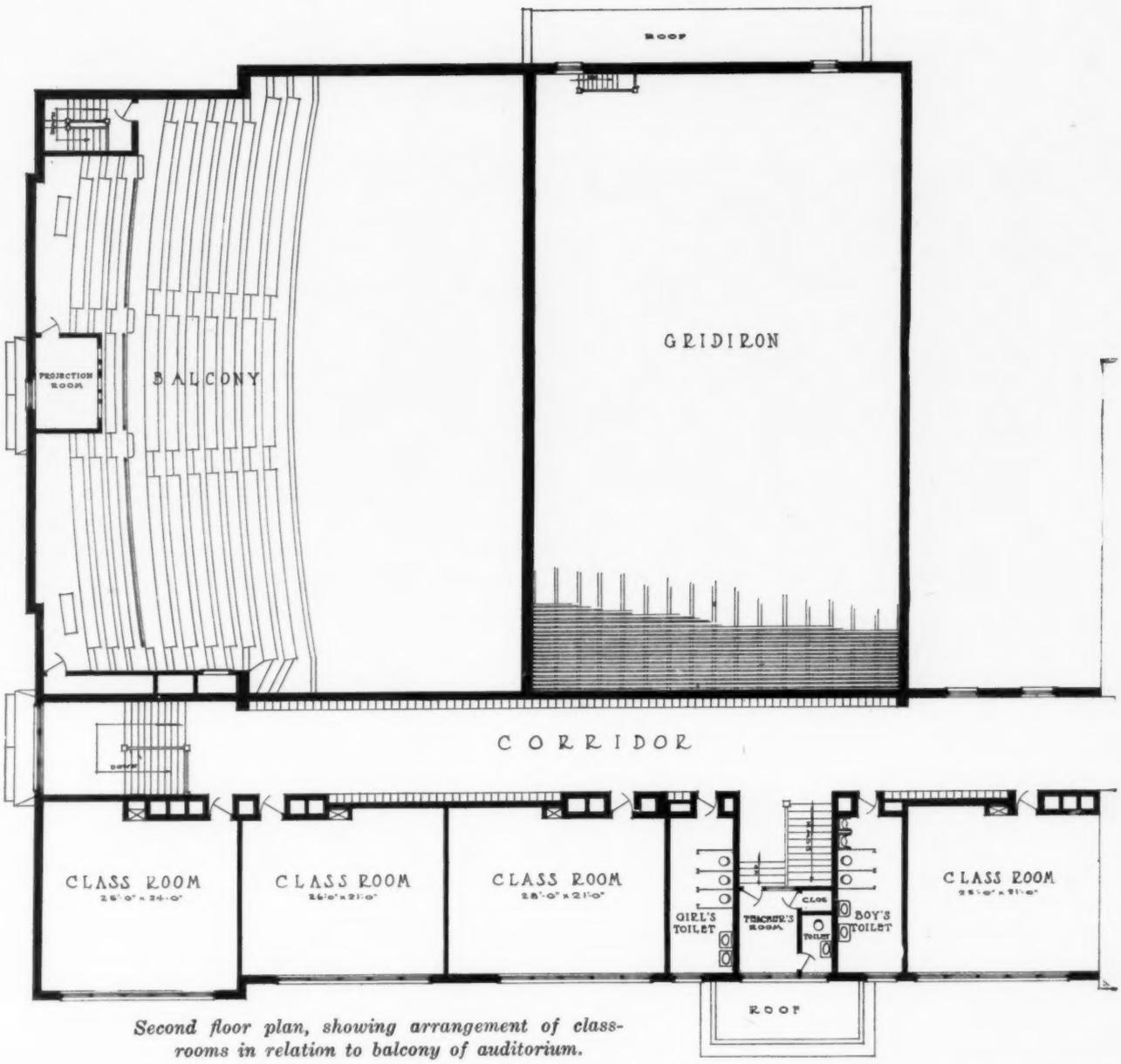
Lexington High School, Lexington, Neb., showing how the new addition conforms to the style of the old building.



View from the balcony of the auditorium showing the gymnasium which may be converted into a stage.



The ground floor plan showing the grouping of rooms about the auditorium.

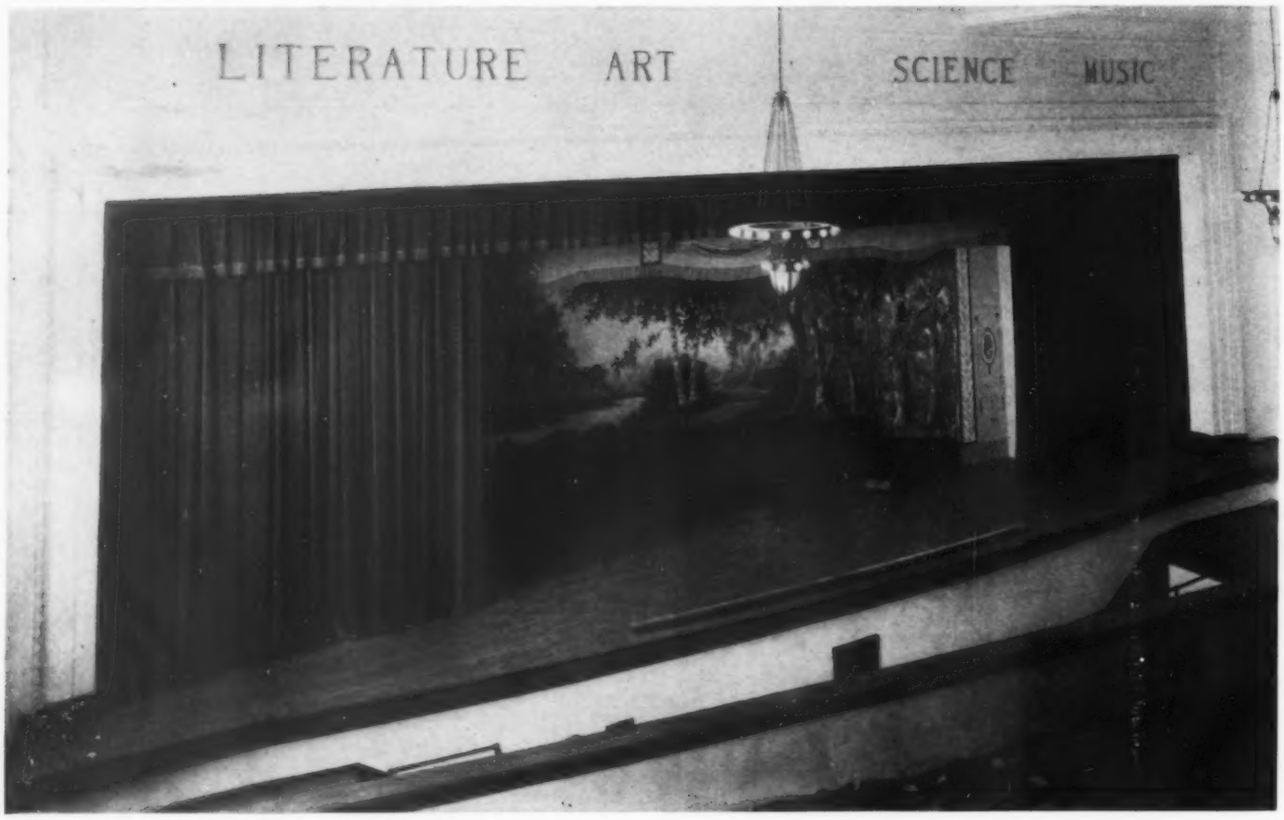


Second floor plan, showing arrangement of classrooms in relation to balcony of auditorium.

steel partitions. Blackboards in classrooms are of natural slate, with cork tack boards above. The manual training shop also has a blackboard that is used by the instructors for illustration purposes. The interior woodwork is of red oak, finished with a light oak stain and three coats of varnish.

The building is heated by a vapor system and has two steel steam boilers. All radiators are equipped with graduated valves. In the auditorium the radiators are recessed and covered with metal grilles. Radiators in the gymnasium are hung approximately ten feet above the floor to be out of the way of the players. Ventilation is accomplished by taking fresh air in at the windows and exhausting it through stacks built in each room. The building is wired for a clock and bell system, electrically operated. This system is controlled by a master clock in the superintendent's office.

The auditorium, which is approximately 63 by 80 feet, is provided with an orchestra pit and a moving picture booth. It has a large balcony with a seating capacity almost as great as the main floor. Large windows to the east and a large skylight in the ceiling provide an abundance of light. Particular attention has been given to the seating arrangement so that an unobstructed view is possible from each seat. The total seating capacity of the auditorium is approximately 1,000. Provision has also been made for a ticket office, a check room, and public toilets, necessary facilities when the auditorium is used for public entertainments. The walls and ceiling have a smooth-trowelled "putty finish," the ceiling being divided with heavy ornamental beams.



Here the gymnasium is shown set for a stage scene.

The gymnasium and stage, 48 by 79 feet, is arranged with a folding door partition toward the auditorium so that each room may be used separately at the same time without annoyance. An electrically operated curtain is directly in front of the folding doors, each half sliding horizontally in opposite directions. The gymnasium may be converted to a stage and for that purpose is equipped with a gridiron, three-color footlights, border lights, spotlights and dimmers, and with buzzers for signaling the operator in the moving picture booth. It also has a convenient scenery storage room. With this arrangement, the floor can be cleared in a short time for gymnastic activities, and interscholastic basket ball games and athletic exhibitions can be witnessed from the auditorium.

Gymnasium Is Well Equipped

The gymnasium is provided with an apparatus room, a storeroom, an athletic director's room, an office, boys' dressing and shower rooms and a girls' dressing room with showers. Both dressing rooms are provided with an adequate number of steel lockers. Shower rooms have slat wainscoting and shower stalls. The manual training shop, with office and tool room, is also on the ground floor. This room has a large exterior door so that automobiles or large pieces of cabinet work may be taken in or out. Across the hall, the superintendent of public schools has a suite comprising public office, private office, toilet and vault.

Classrooms on Two Floors

On the first floor are four classrooms and two toilets. For school use the balcony may be entered from this floor, but for public use it is entered by a separate stairway. Under the balcony are several office rooms for pupil activities. The front part of the second floor is of similar arrangement to that of the first floor, with four classrooms and two toilets. Over the stairway is a teachers' room with a closet and toilet. On the other side of the corridor are the balcony and gridiron over the gymnasium. These are used for stage purposes. The gridiron is connected with the gymnasium floor by a stairway and curtains and scenery suspended from the gridiron are easily accessible.

The dimensions of the building are 120 by 138 feet, the building containing approximately 647,700 cubic feet. The total amount of the general, plumbing and heating and electric wiring contracts was $116,800 which gives the unusually low cost of 18.03 cents per cubic foot. The building complete, including seating, stage scenery and other equipment, cost $126,000.

Which Shall It Be: Education or Business?

Several recent books dealing directly with public-school finance are reviewed here and the points wherein they will be helpful to executives and board members carefully stressed

By ARTHUR B. MOEHLMAN, Professor of Administration and Supervision, University of Michigan

TWO fundamental conceptions and schools of thought exist in the field of school administration. Stripped of all detailed local variations these may be generalized as (1) the conception of the board of education as a legislative, executive and appraisal body, and (2) the board of education as a legislative and appraisal body, with the executive function delegated to a professional specialist.

Under the first practice the board of education acts in its legislative and appraisal capacity while sitting as a board, and in its executive capacity it acts through a series of administrative committees. Supervision of the specialized activities in operation is delegated to a dual or multiple executive, depending upon local practice. The most frequent example of the dual executive is found in the creation of an instruction and a business department in supervisory control of two coordinate officers. The multiple executive includes generally the departments of instruction, finance, school plant and service of supplies. The multiple organization most frequently consists of three or of five coordinate supervisory executives although, in some instances, the number is as large as seven.

Executive Head in Direct Control

The second conception of the board of education as a legislative and appraisal body results in the creation of a unit executive. Control is delegated specifically and completely to a professional educator and subdelegations of specific activities of the executive function are considered as an enlargement of the executive power and are responsible directly to the superintendent with respect to selection, administration, promotion and discharge. The second practice results in the unit organization and, if all of the smaller school districts are included with the city districts, may be considered the dominant practice.

Analysis of the public education activity indicates the existence of three definite and equally important functions. These are: legislative, executive, appraisal. The legislative function is concerned with adopting general policies and providing means and ways for carrying them into practice; the executive function is concerned with translating policies into practice through approved means of procedure; the appraisal function is the act of judging the worth and value of the operation of any activity and the worth and value of its contribution to the desired objectives.

Administration of Policies

In a democratically organized government there must be a clear differentiation between the making and the administration of policies. It is the fundamental right of the people to say what shall be done in governmental activity either directly or through their chosen representatives. The act of executing those policies in public education represents a technique and procedure that are entirely beyond the possession of laymen, no matter how well informed they are generally. The people, through their representatives, make the policies. They employ technical specialists to carry out the policies and then appraise the worth and value of the results as related to their will. Control is maintained through approval of means and appraisal of results.

In like manner the function of all social organization must be conceived as a means, not an end, towards the achievement of the educational objectives desired by the people. The worth and value of all agents and agencies should be considered, and all changes adopted on the basis of their contribution to the achievement of these educational objectives. Successful organization must therefore make provision both for efficiency and for growth.

The board of education as the educational agency for the school district is the legal instrument through which the legislative and appraisal functions, as delegated by the people, are exercised. Its only power is by resolution at a legal session. The executive function should be dele-

gated completely to a professional executive trained and skilled in the profession of education.

A further analysis of the executive function shows a series of fields of activities, each specialized in itself but existing only insofar as it makes a definite contribution toward facilitating the instructional process. These activities may be considered as: administration, child accounting, creative instruction, the school plant, service of supplies, textbooks and equipment, public relations, finance, research, records, appraisal.[1] These activities are organized and expressed with respect to their specific problems and techniques in terms of their contribution to the instructional process.

Activities Not Within Range of Laymen

The functional organization of the executive does not recognize any activities as "business" and therefore within the range of execution by laymen, but it rather establishes such activities as complementary aspects of the instructional process. It departs from the traditional conception and makes the facilitation of instruction the basic criterion in appraisal. It also insists that the delegation of executive power shall be centralized in a professional educator to secure essential coordination of purpose and efficiency in execution. It provides for growth by developing a continuous appraisal of the efficiency of functioning and by making definite provision for experimentation and for change based upon such experimentation.

A single policy pervades all complementary activity and provides for essential coordination of effort which is difficult in practice when there is equality among complementary activities, and the executive authority is scattered among a series of lay committees. It insists that each practice and procedure must be judged in terms of its contribution to the efficiency of instruction and not upon a mechanical basis entirely removed from basic purpose. Several illustrations will suffice to show the difference. The quantity and quality of supplies under a functional organization cannot be considered in terms of cost but rather in terms of their contribution to the efficiency of instruction. The school plant is not appraised finally in terms of money cost but rather upon how well the building acts an an efficient agent in the instructional process. Teaching service is not measured in terms of expenditure alone, but rather in terms of expenditure as it relates to the efficiency of the teaching agents in performing their major activity. Finance cannot be judged of and by itself but must be appraised in terms of instruction. That a fundamental difference exists in the actual practice of the two organization concepts must be apparent to the thoughtful student of education.

In recent years there has been a distinct development of the functional theory both in practice and in literature. It is no longer possible to cover in a single volume the entire field of school administration. The single volume is sufficient only for the development of general principles. The techniques of the several executive activities have developed to such an extent that to present them adequately large separate volumes are required.

During the past few months several volumes have been published that deal directly with the finance activity. These will be of varying interest both to executives and to school-board members. An appraisal is presented here in terms of the foregoing philosophy and principles of organization.

The purpose of "The Business Administration of a School System" as expressed by its author, Ward G. Reeder, is as follows:

> "During recent years numerous books in the field of school administration have been published. To date all of these books have dealt wholly or chiefly with the educational side of school administration; that is, with such topics as the curriculum, textbooks, the teaching corps, extra-curricular activities, pupil personnel, health supervision and the scientific-measuring movement. In all of the treatises on school administration, the business affairs of the schools have been neglected. In this volume, therefore, I have essayed to discuss that large and important phase of school administration."

Administration Classifications Differ

Many in the field of school administration may not agree with the author's opinion that his production is the first to cover the field, but after all that is a minor point and may be accepted or dismissed without serious consequence.

The first radical point of difference in the functional conception of organization is the author's classification of school administration "into two fields, namely, educational administration and business administration. This classification is only general, however, for the line of demarcation between the two fields is not easily distinguished. The two fields cannot be entirely separated; indeed, no attempt should be made to separate them, because the aim of both is the same—to facilitate the giving of instruction."

Since the *raison d'être* of all educational activity is to facilitate the instructional process, it is questionable whether there is any value in attempting

[1] For detailed definitions of executive activities see Hamtramck Public-School Code, Part I, Moehlman and Keyworth, Public-School Finance, Moehlman, Public-School Relations, Moehlman, and Public-School Plant Program, Moehlman.

an artificial classification by following tradition and providing for divisions into education and business. In one sense the entire educational activity is the business of education. Traditionally, it has been this artificial division between instruction and business that has been responsible for many of our difficulties in the field of administration. The dual and multiple conception of executive organization hinges directly upon this conception. Careful study of the evolution of administration indicates the dangers of separating administration into these artificial groups, particularly in the minds of board members and other laymen. Consequently it is difficult to see that Doctor Reeder's book has made any direct contribution to the development of functional organization. On the other hand, its presentation might be considered as detrimental.

Classification of Activities

In his classification under the general title, Doctor Reeder has included such diverse activities as accounting, budgeting, revenue, planning and constructing school buildings, architectural service, school sites, capital outlay, school plant use, school plant maintenance, insurance, inventories, service of supplies, business administration of teaching personnel, pay roll procedure and administration of transportation. Functionally classified, these activities would fall under administration, finance, service of supplies, personnel and the school plant.

Careful observation of current field practice in our traditionally developed organizations indicates that the greatest need is for greater coordination and integration of all the complementary activities in terms of the instructional needs. The standards of quantity and quality of supplies can be determined only through the instructional organization, upon the basis of most carefully controlled research by instructional specialists. Educational designing of the school plant or the translation of curricular needs into number, locations and sizes of rooms is certainly a task for none but professional educators who are trained in this field of problems. Operating personnel must be under the administrative control of the building principal to integrate their work thoroughly in terms of instructional needs. Raw costs cannot be analyzed apart from the particular situation in which they occur and merely indicate the starting of research by instructional specialists. In fact no activity engaged in by the public-school organization can be scientifically studied except in terms of purpose, and how well purpose is being served must be discovered finally through technical research in the instructional field.

The chapters on accounting and budgeting are not strong. Field practice in coding and accounting in progressive centers is far ahead of the practice indicated in this book. Statistical budgets, without explanation and translation in terms of existing policies and practices, are quite inadequate as a means of presenting intelligently the financial needs of the schools. In none of these fields is the book abreast of progressive current practice. There does not appear to be any fundamental philosophy operating throughout. There is great lack of functional organization of the activities. In general it appears to be, with the exception of one chapter on buildings, an armchair collection of selected practice.

"School Finance and Business Management Problems" by N. L. Engelhardt and Carter Alexander, while it retains the traditional classification of business management in its title, is a well organized functional production in the field of educational finance. It is essentially a problem book and well adapted to classroom use in colleges and schools of education. There are 113 problems, most of them well selected, with excellent bibliographies and references for their solution. In addition to presenting the technical phases of finance the authors have also included seventeen problems in the field of public relations.

Finance From the Dynamic Standpoint

Two recent publications of the Hamtramck, Mich., continuing self-survey cover also the field of finance from the dynamic standpoint. These are research study number three, "Finance Procedures" and research study number four, "The Public School Budget." While both were produced primarily for internal education and use, a limited number of copies may be obtained from the board of education. "Finance Procedures" includes the techniques for accounting, nonpublic revenue accounting, pay roll procedure, subject cost procedure, service of supplies, textbooks, and equipment and budget procedure. The accounting procedure adopted as a result of the continuing survey is that developed by the Michigan Education Association. Slight modifications in details have been made to meet local conditions. The completely new contribution is the development of a nine-point number code, covering every possible item in the accounting practice and elastic enough to meet present and all future needs.

The second contribution is the development of a practical technique for securing easily the distribution of cost on a time basis in every field of educational activity. Heretofore cost studies have assumed that little variation occurred within systems or they have completely ignored the fac-

tor of personnel salary distribution. Field research, even of the most sketchy character, shows convincingly that the variation from program and the adaptations of schedules to various schools and conditions make real cost data inadequate without the use of a technique for the purpose.

"The Public School Budget" presents the complete financial program of the school district, functionally organized. The program is so presented that all of the essential facts are immediately at the disposal of the reader. This form of presentation was developed as a result of years of field study in noting the questions asked by board members, the reaction of board members to statistical and narrative presention and the best methods of unit comparison. Provision has been made to meet the requirements of all types of individuals. In the first part are presented summaries and skeletonized information that give the reader an immediate conception of the entire program. In the second part each activity is analyzed in terms of the service, the policy of the board of education, needs and analysis of needs. Succeeding parts present detailed data, taken from the accounting records of the board of education, which act as supporting evidence to the first two parts. School executives will find both of these publications of interest and of value. Since they are functioning in actual practice, the concept and technique cannot be considered purely theoretical.

"Public School Finance" by Homer P. Rainey is the first publication in this field written by a college president. Doctor Rainey, after a background of experience in public-school and university fields, is now head of Franklin College, Franklin, Ind. The volume is well organized and covers the functional organization advocated earlier. The first ten chapters are devoted to the local problems and the last four to the financial problems of the state.

Capital Costs Are Discussed

Except upon one or two points the material gathered on accounting and on the budget has been much better developed in previous publications. The most interesting contribution is the discussion of capital costs in education. Doctor Rainey would apply directly to public-school accounting the same practices current in business, including such items as ground rent and depreciation in the accounting scheme. Many specialists in the field of public-school finance and in municipal administration would take issue with him upon this procedure. Neither Upson nor Rightor, in municipal and state accounting, feels that much practical value accrues from this conception because of the disutility of taking money by taxation and establishing large reserves for depreciation and imputed economic costs. Doctor Rainey himself admits the impracticality but suggests that some way out must be found. He makes an interesting and much needed differentiation in terminology between capital outlay and capital costs, including under the second head the economic costs. His entire treatment of the subject is suggestive of "pay as you go," although he does not advocate this practice directly. Doctor Rainey calls attention, through quotation and application, to some of the commonly overlooked dangers of bonding which the artificially stimulated enthusiasm of the moment appears generally to neglect.

Contents Are Well Organized

Taken as a whole, the book is well written and well organized. It does not make a particularly new contribution to the subject and in some respects does not present the complete development of certain activities in current practice. Many phases of the subject, costs, for example, are not treated. While questioning the advantage of certain units of the school plant, such as swimming pools, he presents no clear-cut philosophy as a basis for procedure in evaluation. Throughout the book there is a noticeable absence of the educational philosophy of the author. In making certain points, he appears to depend upon the quoted opinions of others more than upon an evaluation of those views in terms of his own philosophy. With the exception of the treatment of capital costs, the book is essentially an academic production which does not add much that is new to the literature on public-school finance.

The technical descriptions of the books reviewed here follow:

"School Finance and Business Management Problems," N. L. Engelhardt and Carter Alexander. Bureau of Publications, Teachers College, Columbia University, 1928. 512 pages and illustrations. Price $5.

"Finance Procedures," Arthur B. Moehlman and Philip Lovejoy. Research Series No. 3, Hamtramck, Mich., Board of Education, 1929. 160 pages, 35 illustrations. Price $2.50.

"The Public-School Budget," Arthur B. Moehlman and Philip Lovejoy, Research Series No. 4, Hamtramck, Mich., Board of Education. Price $2.

"The Business Administration of a School System," Ward G. Reeder, Ginn and Co., New York, 1929. 447 pages, 59 illustrations and tables. Price $3.

"Public-School Finance," Homer P. Rainey, Century Co., New York, 1929. 381 pages. Tables and illustrations. Price $3.

Applying to Mathematics the Modern Ideas of Educational Science*

Principles and procedures that apply with little modification to all fields of secondary mathematics are here outlined and suggestions offered for modernizing the study of this subject

By GEORGE A. BOYCE, Instructor in Elementary Mathematics, Western Reserve Academy, Hudson, Ohio

IF WE trace the subject of geometry from its origin, we find that the Egyptians were probably the founders of the subject. Whenever the Nile overflowed its banks and flooded the surrounding country, surveyors were sent out to resurvey the country so that taxes could be collected. Mother Necessity, therefore, created the science of geometry as a practical tool. Unfortunately, the Egyptians used empirical, arbitrary methods to compute the areas of irregular tracts, so that in many instances the formulas were inaccurate.

Later when the Greeks came into contact with Egypt they absorbed some of the Egyptian civilization. The study of geometry appealed to the orderly Greek mind, and gradually the most complete, logical subject ever formulated (except for logic itself) was built up, correcting the inaccuracies of the Egyptians but concerning itself little with the utilitarian values of geometry. It might be said that to the ancient Greek geometry was in a way a practical subject for it gave mental satisfaction and joy. This was true, though, for only a few geniuses and a small group of students who were particularly interested in pure intellectualism.

Greek Methods Used for Centuries

When the medieval European began to delve into the ancient culture of Rome and Greece, the formal, demonstrative geometry of the Greek was again studied. It was this same geometry that was handed on to the scholastics, the scholars of the Renaissance, and down through the Latin grammar schools, the academies and finally the early high schools of this country. For centuries, wherever geometry has been taught, it has changed but little.

A change is now taking place in spirit. Textbooks in geometry are being revised. New books are appearing. Modern authors are writing and endeavoring to include more of the practical applications. There is indeed somewhat of a reversion to the Egyptian concept of utility. We find the new books in finer, more attractive bindings. The type used by the printers is better and the arrangement of the pages is improved. Clear-cut drawings, illustrative pictures and bits of historical material are introduced. The latest requirements of the examining bodies are emphasized. Some of the propositions of the old geometry of Euclid which were retained for centuries have been eliminated. Standardized tests are included. Attempts are made to allow for individual differences.

Modern Science Now Applied

All of these events mark the attempt by forward-looking men to apply to mathematics the modern ideas of educational science and theory. But there is something lacking. The product is at best an admitted compromise between modern science and traditional art. Modern educational thinkers have evolved a new concept of the curriculum. The new philosophy has been sufficiently crystallized, the new psychology has established sufficient laws and educational investigators have conducted sufficient research for us now to be able to take a definite position on the major educational issues. Try as we may, it is not possible to retain the great bulk of the traditional geometry and satisfactorily apply to it the proved laws of modern psychology or the generally accepted aims and philosophy of the educational methods of to-day.

Consequently I believe that the time is ripe for a different approach to geometry. The original geometry was never intended for the masses and should never have been required of all pupils in a universal system of education such as that created here in America. If we are going to require it of all pupils, then we want a selected portion of geometry containing those elements that would be of value to the mass. We should no longer start with the precedential list of propositions to be learned, definitions to be memorized and an-

*This is the first part of an article on modernizing high-school mathematics.

cient "originals" to be demonstrated, and then assume that high-school pupils should study them all. Rather we should first agree upon our educational philosophy, list the relevant facts of psychology and upon this foundation build a new course of study in geometry of more intrinsic worth.

It is from this approach that the working principles for curriculum revision in mathematics are here stated.

It is impossible to get into a simple statement the whole import of one's idea as to what should constitute an educated person. And yet, if we wish to secure an education or if we wish to educate others, it is necessary that we have a clear, rather simple idea as to what the thing is that we are after.

For our purposes, after examining the statements of the leading educators, it is "helpful to assume that the aim of education is to help the person to do well those things which he most likely will need to do." [1] We believe, then that the aim of secondary education, which is the phase of particular concern in this instance, is to help the youth to do better those desirable activities that he naturally enjoys and to prepare him for the activities that make up or ought to make up well rounded adult life.

Functional Geometry Needed

In regard to geometry this means that there is need for a functional geometry that will operate in daily living. There should be included activities of predominant pupil interest, activities of common occurrence in adult life and activities that can reasonably be expected to operate in an improving society. The rest of geometry, as it is now known, should not be taught to every young man seeking a high-school education. Our traditional geometry should be reserved for those who are mentally capable of understanding it and who are intellectually enthusiastic about a further study of the subject or for those who require additional geometry for a specialized vocation or for entrance to a particular college.

Rather than including merely book and blackboard experiences of the scholastic mind, the curriculum should take into consideration the many experiences that people have and are likely to have both in and out of school. It may be conceived to include the activities in the home, in the shop, on the farm, in industry and in play.

It is apparent, therefore, that the course in geometry as here proposed should be more than a compendium of knowledge and more than a statement of propositions to be proved formally. It should be, in a sense, an account of what children do in learning to perform the predetermined, worth while activities, involving geometry, of real life.

Our next step is to state definitely the position taken on the principal issues in psychology and philosophy that apply to education, particularly those that are pertinent to mathematics. Many of the principles stated here are fairly well established and out of the field of controversy. It is appropriate, however, to indicate how these fundamental ideas may be put to practical application in building the course of study.

I. The Laws of Learning:

a. The law of exercise or use states that exercise of any reaction tends to make that reaction more prompt, more certain and more easy.[2]

b. The law of frequency is based upon the previous law and implies that the more frequently a connection has been exercised, the stronger is the connection.

c. The law of disuse is somewhat the converse of the second law. Whenever a reaction is not exercised during a length of time, the strength of the connection is decreased.

d. The law of recency states that practice effect is cumulative in that the more recent the exercise, the stronger the connection between situation and response.

e. The law of readiness really belongs here. The interpretation of the law is that "when an instinct is ready to act, for it to act is satisfying; when an instinct is ready to act, for it not to act is annoying; when an instinct is unready to act, for it to act is annoying." [3]

f. The law of effect may be stated as follows: "The individual tends to repeat and learn quickly those reactions which are accompanied or followed by a satisfying state of affairs. The individual tends not to repeat or learn quickly those reactions which are accompanied or followed by an annoying state of affairs." [4]

Practice Value Generally Recognized

Everybody is more or less familiar with the laws of use, disuse, frequency and recency. One cannot play tennis or football or participate in any form of athletics without being aware of the value of frequent, periodic practice.

In intellectual exercise, these laws are often lost sight of. Drill and review periods are quite spasmodically arranged. More often an ability is practiced a few times and then left alone until reviewed at the end of a chapter or a term or some other such time. A full recognition of the laws of learning demands a prearranged, definitely established plan of drill. The length of practice

periods, the frequency of practice periods and the distribution of reviews can now be intelligently planned in the light of experimental evidence.

In general, experimental studies indicate that thirty-minute practice periods yield greater returns per unit of time than longer or shorter periods. Likewise, there is indication that breaking up the practice periods, with intervals of from thirty minutes to twenty-four hours, brings the best results.

After the material or ability has been mastered, reviews may be held with increasing intervals and decreasing lengths of time. "The first review, which should be relatively long, may be held after an interval of forty-eight hours; the next review, somewhat shorter, a week later; the next, shorter still, three weeks later; the next, two months later, followed by other reviews at intervals of six months or more." [5]

The accompanying table is given as an illustration of the returns in efficiency to be had from a scientific planning of drill.

RELATIVE IMPROVEMENT IN SPEED OF SUBSTITUTION WHEN THE SAME AMOUNT OF PRACTICE IS DIVIDED INTO PERIODS OF DIFFERENT LENGTHS. (FROM PYLE)

Group	*Length of Period*	*Relative Improvement*
A	15 minutes	22.3
B	30 minutes	36.1
C	45 minutes	25.0
D	60 minutes	14.8

The course, then, should have practice exercises that are frequent. Practice on every included ability should be found spread periodically throughout the rest of the course, after it is first thoroughly explained. There is still controversy as to whether drill reviews should embody just one process, one type of exercise, or whether a review should contain mixed exercises of different types. While a final answer cannot be made, partial evidence in the field of arithmetic, concerning the fundamental operations of addition, subtraction, multiplication and division, indicates that a mixed fundamental review gives better results than the single process review.

The law of readiness requires slight amplification. The practical application in regard to the proposed course of study is that we should make a conscious attempt to create interest, to develop the proper "mind set," and to get the activities started with zest, in order to avoid as far as possible causes of unreadiness. In particular, we should include much material that has been proved to be of inherent interest to a large number of students.

The law of effect is quite clear on the face of it, but it is a particularly important law because it is so readily passed over in many classrooms. In fact, until recently, distasteful tasks producing annoyance were considered to be highly virtuous materials for mental and spiritual growth.

The experiments upon which the law of effect is based, however, show that people learn more quickly, desire to repeat and remember better the things that are accompanied by or result in satisfaction. We can, of course, conceive of satisfaction resulting from the accomplishment of a difficult task that has challenged our best efforts. But we cannot conceive of a growing interest being developed by positively distasteful tasks and we must recognize this law of effect to the point of exclusion of too difficult exercises, pointless drill resulting in fatigue and other common sources of annoyance. We must incorporate activities that appeal to a variety of the senses, activities calling into play manual abilities and allowing for freedom of movement. We should include also as much visual material of an interesting sort as can be collected, with the idea that textbooks should be as appealing as possible.

In like manner, we should endeavor to secure for the pupil the approval of those whose approval is desired, the approval of his fellows and the approval of himself. We should include socialized activities that will bring about group reactions, and individual activities that are not too difficult for the ordinary pupil, as well as selected activities that will provoke a challenge to the most brilliant.

II. The Principle of Individual Differences:

Closely allied with the psychological laws of learning is the principle that there are enormous differences in the capacity and the effect of practice between members of a class. This is true even when an effort has been made to bring about homogeneous grouping. And not only is this true about individual capacities and interests but it is true in regard to variations of emotions from day to day. One day a pupil may be bored, disinterested, fatigued and unready for work, while the next he may be full of "pep." The result is that he may miss something really important on the off day.

We must therefore attempt to place in the course of study, material that can be understood by the ordinary and the rather slow pupil. In addition, there should be selected material, as mentioned before, of an optional nature, for the more brilliant pupil. We must look upon a class as being composed of individuals, some of whom may do but mediocre work while others should have the opportunity for more intensive and extensive work. Furthermore, we should attempt to

present the material in such a way that the pupil who has been absent or who has missed any unit of work may know specifically what he needs to master, in order to "make it up." Plans should be made for a greater observation of individual errors and provision for practice thereon when necessary.

III. The Principle of Method:

This leads us to the next principle, namely, the school must give conscious practice in problem solving.

John Dewey tells us that if the pupil is to work intelligently, efficiently and under the most favorable conditions, he must have first-hand experience that is genuine research for him at his level. Then and then only can there be whole-hearted planning, collecting of facts, consulting, observing and the calling into play of imagination in seeking possible solutions to the difficulty.[6]

The inferences from this idea are manifold. In the first place, we cannot be satisfied with merely using text explanations. Lack of sufficient explanations on difficulties of new work leads to blundering and waste of time and effort. And by their very nature, text explanations are not sufficiently vivid. Whenever possible there should be a first-hand study of the thing itself. When that is impractical, there must be a wider use of visual aids, supplemented by other means and a variety of methods. In order of decreasing vividness we study the thing itself, a picture of the thing, are told about it or read about it, remembering that the less the previous knowledge or acquaintance with similar material, the more essential that we see the thing.

Likewise we must remember that review other than for remedial drill or purposes of recall is necessary. Review is necessary for organization, coordination and so on. Correlation of mathematics with other fields of learning, motivation of the problem in hand and the socialized recitation all fit into this scheme of things. Finally it is helpful to develop a type of schoolroom furniture that will permit laboratory work, cooperation and greater flexibility in the arrangement of the room than is provided by the conventional type of school furniture.

IV. The Principle of Measurement:

"Modification of the stimulus changes the response and that difference can be measured."[7]

The first three principles lead us inevitably to this fourth principle. The laws of learning describing the various conditions of learning, and the principle of individual differences describing the variable rates of learning imply that changes take place in the pupil. If changes take place, if they exist, it is our hope that they may be measused. The principle of method indicates that the changes are largely in terms of pupil development rather than in terms of subject matter. The pupils should be aware of what they are doing and what they are to accomplish. It is the teacher's part to teach, test, diagnose and reteach. The emphasis placed upon the reteaching varies according to the number of items in which the pupil fails and their importance.

Likewise we are compelled to remember that class periods start and end, that during the period changes have been taking place in the pupils and that at the end of one, two, three or four periods, whatever the unit may be, we wish to know what changes have taken place and how much each pupil has accomplished.

Testing Programs Essential

Offhand it might seem that a testing program was not an essential part of the curriculum. But let us examine a learning situation. If one is learning to play golf, for instance, the curriculum consists of judging distances, selecting the proper clubs, swinging properly, adopting the right stance and other activities performed by the aspiring golfer. There are no formal tests, no new type tests. Closer examination, however, reveals a number of tests, for there is a golf score for measurement and a par to work for. Furthermore, after each practice period there are other criteria for measuring growth, such as self-observation and the observations made by the professional coach or one's fellow players, without which one is handicapped. In any field of learning, an essential part of the curriculum is some sort of testing device for measuring achievement and determining weaknesses for remedial practice.

The testing program, therefore, composed mainly of new type tests, should be an integral part of our course of study.

V. The Principle of Psychological Organization:

"The content of the course must be selected from the point of view of the children and from the consideration of social needs and not solely from the logical requirements of mathematics."[8]

In no one of our accepted principles is there intimation that mathematics must necessarily be separated into the traditional divisions of algebra, plane geometry, solid geometry, trigonometry and so on. In no one of our accepted principles is there implication that mathematics should be a watertight compartment separated from other fields of learning, such as science, shop and so on. Rather, it is the natural meaningful situation that

offers more effective learning than the artificial.

To be sure, there must be logical deductions and logical items in mathematics. When we say that the order must be psychological rather than logical, we do not imply that the two are conflicting ideas. We feel that the psychological is the logical.

VI. The Principle of Transfer of Training:

We are not concerned with defending the course of study on any theory of general transfer of mental discipline. It was formerly believed that the study of geometry would, let us say, increase one's ability to arrange traffic laws in logical order, to learn them and to draw proper conclusions from them. Such transfer is interesting, if true. We neither affirm nor deny it. We would avoid the issue on the contention that if it is one's desire to understand traffic laws or logic or what not, it might better be done by a less roundabout way than through a study of geometry.

What we are concerned with is the transfer of one's geometry abilities to all geometry problem situations. If we desire a pupil to be able to calculate the volume of cylinders whenever the problem arises, our success can be measured purely by the pupil's ability to calculate the volume of a silo or a fountain pen or a jar of cold cream, and so on. This important matter of transfer of training has been, and still continues to be such a field of controversy that it is well to review briefly the major findings and conclusions to date, in an endeavor to substantiate the position we have taken for building this particular course of study.

Criticism Is Divided

"At the beginning of the twentieth century the first serious attack upon the claim of wholesale transfer was made by Thorndike, and his criticism has since been elaborated by many investigators. Since that time the educational world has been superficially divided into three classes. Naturally there are those who view any attack upon the transfer of training with suspicion and in some cases with alarm. There is a second group, of large proportions, that maintains essentially that there is no transfer. And there is a third group, the most constructive and powerful of the three, which is endeavoring to find just how much can be salvaged from the remains of this once magnificent structure and put to use. Thorndike says that there is transfer where there is identity of substance and procedure; Bagley claims that ideals may be transferred, and Ruediger adds that this is particularly true if the ideals are made conscious; Colvin shows that many general habits can be transferred, when habits that are called general are really specific habits of general application; Judd holds that generalizations may be transferred, and other writers have made other additions." [9]

It is interesting to compare the two following investigations by two different schools of psychology. The first experiment was conducted by H. O. Rugg, a leader in the application of the American school of psychology to education.

"Rugg gave a group of 326 engineers in the freshman class at college a series of tests before and after a semester's training in descriptive geometry. The results of these tests were compared with those obtained from a control group of eighty-seven subjects who did not study descriptive geometry, but were given the initial and final tests. . . . An important outcome of Rugg's experiment, in harmony with others, was the fact that approximately one-third of the engineering group made no improvement in these tests as a result of the semester's training in geometry. Most of the tests used in this investigation were in form or content or both much akin to the functions practiced in one form or another by engineering students." The conclusion was that geometry helped the engineering abilities only when it contained similar factors. The amount of gain was proportional to the degree of similarity between the two.[10]

Contrasted with the above experiment is the following one by Köhler, proponent of the recent Gestalt psychology coming from Germany. "In one of his experiments in the choice-training of apes, Köhler employed a series of five colors—blue, indigo, violet, purple and red—to designate the direction of choice. At first he tried to train the animals with two adjacent colors of this series, but his effort was in vain. No ape could at first distinguish colors so near one another as indigo and violet. He then employed two colors separated by one grade, such as indigo and purple, which the apes learned to discriminate without difficulty. After this training had been successfully carried out, Köhler returned to the finer discrimination of the adjacent colors, and found that the apes were now able to 'transfer' their training, and choose the redder or bluer of any two colors in the series." [11]

Normal Situations Used in Training

Finally, we agree, in the light of the facts, with Charters when he says, "The safe position for investigators to take in matters concerning the curriculum is that the training of abilities should be carried on in connection with material as close to normal situations as possible. If memory is to

be trained for use in practical situations, then it should be trained in material as nearly practical as possible. If discrimination in color is to be trained, exercises should deal with color. . . . The training should be given in situations as nearly normal as possible, and the supporters of any subject are wise when they assume that formal discipline is not one of the arguments in favor of retention of their subject." [12]

"But," echo back the doubtfuls, "you cannot predict all practical situations that must confront a pupil. You can merely expose him to a limited set of life problems and consequently there must be a generalization of some sort."

Generalization and Experience

This is undoubtedly true. In this connection, however, "the essential requirement is that generalization and specific experience should interpenetrate. . . . Usually the generalization must be delayed until experience has been sufficient to make the principle partly intelligible. It should come at a time when it will to some degree illuminate the particular facts of which it is a summary or generalization and when it will be illuminated by them. Introduced too early, it is likely to be learned by rote independently of the particulars; introduced too late, its explanatory function can be only partly fulfilled. Generalization and experience must develop together, each enriching the other." [13]

In the past, geometry teaching has started with a generalized study and endeavored to make applications, if any, to the specific. For instance, geometry started with the study of circles in general and then endeavored to find applications to wheels and arches. We believe that in many cases it is desirable to start talking first about wheels, axles, automobile cylinders, fountain pens and so on, in concrete situations. From this we can build up our laws and facts about circles in general and conclude with the desired generalization, thus giving pupils a well rounded and a practical knowledge of the subject.

(To be continued.)

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Wherein Are Colleges and High Schools Failing?

To David Snedden, Teachers College, Columbia University, such questions as "What is the aim of education?" appear as naive and futile as "What substance will turn all base metals into gold?" "What talisman or fetish will always bring good luck?" The numerous purposes of education can no more be comprised within a single formula than can the numerous food values essential to best living be found in some one article, Mr. Snedden points out in a discussion of whether high schools, colleges and universities are meeting present day requirements, published in *Educational Administration and Supervision.*

Mr. Snedden summarizes his investigations as follows:

American colleges training for the well-defined higher vocations—the professions—have clearly conceived goals and give promise of future progress.

The highly exploratory and experimental work of American colleges or departments training for those higher callings that are still formative offsets to a great degree the fact that these colleges are confused as to their objectives and probably highly ineffective in their choices of means and methods.

Subject-Matter Specialists Dominate

Subject-matter specialists almost completely dominate the faculties of the American liberal college. They are trying to provide a liberal and cultural education and at the same time one of practical or salary-earning competencies. In consequence they are doing neither well.

A dearth of genuine vocational schools exists on the secondary-school level. Academically minded educators are responsible for this in that they have centered their attention on preparing a few pupils for college.

Fundamentally high schools should have nothing to do with vocational education. Except in a few of the largest cities their very locations preclude any but sham vocational training except for two or three vocations.

They should seek to develop a functional liberal education for that large majority of pupils who will never go to college and for whom their present curricula so largely made up of foreign language, mathematical and highly formalized science, history and English courses, no more constitute functional means of honest liberal education than does sawdust constitute useful food for human stomachs.

Index Numbers for School Supply Prices

Price of paper is lower than it has been for some time, but this fact does not assure the administrator that he can buy paper products cheaply

By HAROLD F. CLARK, Professor of Education, Teachers College, Columbia University, and JOHN GUY FOWLKES, Professor of Education, University of Wisconsin

THE index numbers for school supply prices for this month show that the price of paper is somewhat lower than it has been for some time. A large overproduction at the plants is responsible for the present low price of paper, a condition that is likely to continue for some months to come.

Despite the fact, however, that the price of paper gives no promise of rising at the present time, this does not assure the local school administrator that paper products may be purchased at a decrease in price. As has been pointed out a number of times previously in this department, the prices of school supplies are based on seasonal demands as well as on original costs.

Reports on other school products may be presented briefly as follows: Most textile products are weak and will probably decrease in price. On the other hand, metal products are steady and will probably rise. Chemicals will remain fairly constant, with a few advances. Other school supplies are fairly constant, reports indicate.

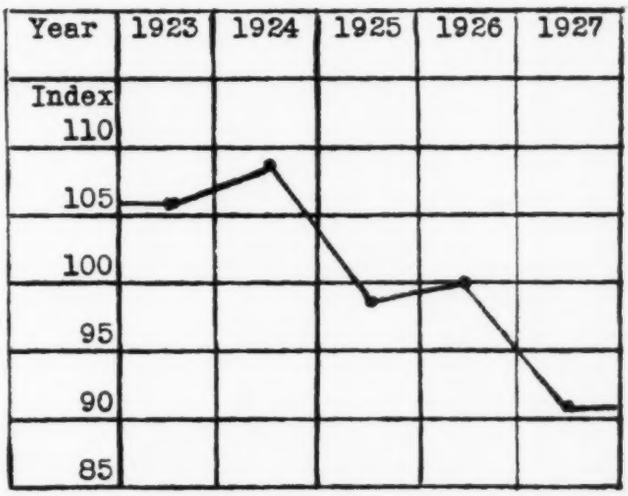

Chart 2. Annual index of the prices of instructional supplies

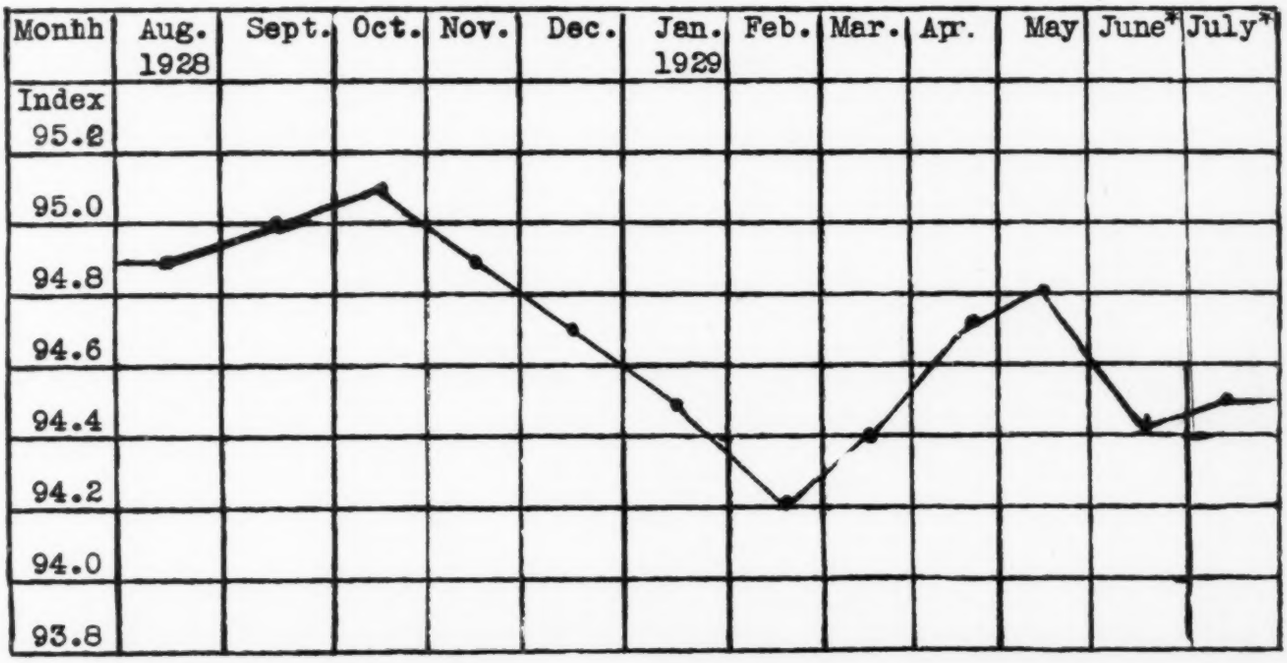

Chart 1. Monthly index of prices of instructional school supplies

Editorials

The Value of Social Contact in the High School

THE supreme need in human life is for a man to secure such a degree of harmony in adjustment to the world of people and of things that he will be able not only to maintain physical life but also to secure intellectual, social and esthetic enjoyment. He will get the most out of life who has learned how to live in a way to reduce friction to the lowest point and to increase to the maximum the experiences that yield pleasure.

What types of experience yield the most abiding and satisfying pleasure? Let one who has not tested this matter analyze his experiences for a day. When the day is done, let him ask this question, "What are the experiences that have exalted the tide of life to-day and what are those that have depressed it?" It will be discovered readily that any experience that has counted heavily in exalting or depressing the tide of life has had a social or personal and not a material origin. We have gone so far in our adjustment to our physical environments that we do not have to give much attention to the problem of physical survival or welfare. Most of us could live out our days with very little material disharmony even if we never thought at all about problems of physical adaptation.

Through every hour that we live, however, the problems of intellectual, social and esthetic adjustment press upon us for solution. The more we discover about the universe, the more complicated and mysterious it becomes. It is not rash to say that an individual cannot secure any degree of harmonious adjustment unless he has gained insight into the way the universe is constituted and how it functions. The one who lacks this insight is certain to be fearful and superstitious. Superstition is just as widespread today as it ever was, although we are not now superstitious about the same things that troubled our remote ancestors. But almost every day one hears of a new mystical pseudo-science that is founded upon the tendency of people to explain the phenomena of the universe on a superstitious basis. So it is of supreme importance that every pupil in his school course should get into the way of thinking about the universe in accordance with the laws that determine its functioning.

The problems of adjustment in contemporary life are more than anything else social in char-

acter, and every day they become more complicated because one comes into contact with a constantly increasing number of people in ever more intimate relations. A hundred years ago, the typical person did not have one-fifth of the social contacts that most persons have to-day. People are now doing many more things than they did formerly. This means greater likelihood of conflicts, and it means also greater opportunities for gratifying fundamental human needs. He who can live harmoniously with the people about him can live more fully and richly in a social way now than was possible for his ancestors a hundred years ago. On the other hand, the person who cannot come into contact with his fellows without the development of friction is likely to experience more strain and stress in life to-day than would have been the case a hundred years ago. A pupil who leaves school now without having gained either insight into the driving forces in human life or skill in adjusting himself to the ways of those persons among whom he must live, is an uneducated or a miseducated individual. If he has not learned to play fair with his fellows, he has not learned the lesson that would have been of chief importance to him, because he cannot get on without incessant conflict. He will irritate his fellows, this irritation will in time react on him and in the end he will get the same kind of treatment that he gives.

Many Social Advantages Offered

In most schools to-day a pupil has opportunities to gain the kind of social experience that will be of value to him throughout his life because if he wishes he can easily establish desirable contacts with his fellows. A pupil may secure practically every type of social contact that he will ever experience in later life, because a typical American high school is an epitome of human society even in its most complex aspects. The pupil ought to take advantage of every occasion to extend the range of his contacts with his fellow pupils. The last thing he should permit himself to do is to erect social walls around himself. He should not confine his contacts to any small group of classmates.

Many of us, no doubt, have reviewed our school experiences in an effort to find out what was distilled from them that has proved to be of value or comfort in the needs of daily life. We find that as much real, lasting pleasure and benefit were secured from contacts with classmates as from any class or laboratory work. As much intellectual value was derived from companionship with classmates as from any course of study. The give and take with keen minded and eager classmates served to inject vitality into knowledge and to articulate it with what had already been acquired and assimilated. If many of us were repeating our high-school courses and had to sacrifice any phase of our experiences, we would cling longest to the intimate comradeship, intellectual as well as fraternal, that we had with fellow pupils who were traveling the same route we were.

Mathematics in Every-Day Life

We begin in this issue a series of articles designed to show how theoretical mathematics may be utilized to explain phenomena and situations encountered by most of us in every-day life. These articles will show, further, how the physical laws described in different branches of mathematics may be utilized to promote human well-being. It should prove illuminating and inspiring for a high-school pupil to see how man has discovered invariable laws according to which the immediate world about us as well as the universe as a whole is regulated, and how our welfare is promoted by understanding these laws and conducting ourselves in accordance with them.

What is taking place or about to take place in the teaching of mathematics will be shown in the articles referred to which will illustrate the new attitude toward all knowledge that is being transmitted to the young through the schools. Even the most theoretical and abstract knowledge is being brought within the range of the pupil's observation, experience and actual needs. Probably most readers of these lines can remember the time when a teacher of geometry, say, never thought of leading his pupils to see how geometrical principles helped to explain the relationships and phenomena encountered in daily life and how geometrical laws could be used to master Nature and make her serve man according to his needs. A few years back, geometry was only a system of diagrams, the properties of which had to be memorized and recited by the pupil. It never dawned upon the learner that his diagrams symbolized laws according to which the universe and every minute part of it was constructed and is governed.

In this connection I may mention an experience that left an indelible impress upon me and that indicates how mathematics ought to be taught. I studied trigonometry in an academy under a civil engineer who was then taking part in a survey of New York State. He took his pupils out into the field with him and showed how it was possible to determine the amount of land in a certain area without measuring it all. Triangulation towers

had been erected at certain points many miles distant from each other and the engineers made observations from there and ascertained with a high degree of accuracy the amount of land that lay within the triangular areas. He showed it was possible to determine the measurements of all sorts of heights and distances without actually measuring them. The pupils verified some of the engineer's trigonometrical measurements, they became firmly convinced that he had a marvelous key to measurements and they became absorbed in the study of trigonometry. No pupil who studied trigonometry in that way was ever heard to complain of its dullness or its difficulty.

When mathematics can be brought out of purely symbolic and abstract realms and made to explain one's environment and be utilized to promote understanding and well-being, pupils will not feel an urge to burn mathematical books and to regard any mathematical subject as the driest, the dullest and the most useless branch in the entire curriculum of studies.

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"Truant" Professors Are Product of Modern Pressure

THERE can be no doubt that most people in this country think there is something wrong with the teaching in higher institutions.

By word of mouth and by pen college teachers are berated for their inefficiency, and particularly for their indifference to the task of transmitting knowledge to college youth. One can read any day a magazine or newspaper article, or listen to a speech in which it is charged that the reason college students are so little interested in their work is because their teachers are more interested in research or in writing than they are in instruction. An article in the *Outlook* sums up popular opinion to the effect that professors would rather do anything under heaven than teach.

The widespread complaint about ineffective college teaching is pretty largely justified. The typical teacher in higher institutions does not believe there is an art of teaching and he would not try to acquire it if there were such an art. One can find instructors in every higher institution who are bored by talk about good teaching. They do not like to have a president exhort them to give attention to ways and means of making their work in the classroom or in the laboratory interesting and effective. There still lingers in higher institutions the belief that the more that students hate a task the better it will be for them to be compelled to perform it. The public schools have pretty largely got rid of the idea that education consists of memorizing dry facts handed out in a dull way, but this view of teaching lingers on in colleges and universities.

In order to find an explanation of the situation in higher institutions one must go back twenty-five or thirty years. In those days, college teachers devoted nearly all their time and energy to instruction. A college teacher prided himself upon being an academician. To be known as a learned man teaching in a college was a coveted distinction in an earlier day. The typical old-style college teacher had no desire to add to the sum of human knowledge. He wished simply to transmit the knowledge that had been accumulated by others. He was not an investigator. The higher institutions in an earlier day made little or no contribution to human knowledge. The professor remained aloof from life outside of academic walls because he did not want to be contaminated by commercial interests or activities.

But a change came over the college and university world about a quarter of a century ago. There was a rather sudden awakening to the need of adding to knowledge in every field of human interest and activity. But who should search out new truth? Certainly not the man on the street or in the factory or behind the counter. No, the university man alone was equipped with enough knowledge to understand how to secure new knowledge and he alone had the leisure to undertake investigation.

Research Supplants Teaching

So the higher institutions, allowing for a few exceptions, rapidly became research centers or agencies. The idea captivated them and they embraced it with extraordinary vigor and ardor. The teacher became submerged and the investigator came to the front. Teaching was regarded as a subordinate and relatively unimportant function of the university, and the mere teacher, no matter how expert he might be, was considered inferior to the research worker. The teacher was not promoted as rapidly and he could not reach as exalted a position as the investigator. He was not given distinction in any way in comparison with research colleagues. Inevitably, then, research became the watchword of the universities and teaching fell into an unenviable position. University men did not covet a reputation for teaching but only for proficiency in research. Young men joining college faculties at once felt the pressure for research and the comparative indifference to teaching, and true to human nature, their aspirations ran in the direction of research rather than in that of efficient instruction.

Another revolutionary change came over the university world twenty-five years ago. In an earlier day, "academician" was a term of respect and of high appreciation. It denoted a man learned in classical knowledge, one who had forsaken the market place and the fleshpots that he might accumulate stores of knowledge unrelated to the material, commercial, social and political interests and activities of the world and that he might devote his life to imparting his knowledge to the rising generation. But a quarter of a century ago here in America men of the world began to find fault with those who dwelt within academic walls. "Academic" became in time a term of reproach and even of disrespect. The men of the world said to the men who were living apart from the world, "Why don't you come out where people live and move and have their being and tell them how to live better than they are doing? If you have anything that is of benefit to mankind, come out and show that you have it and particularly teach us how to use it. We doubt whether you know anything or can do anything that is of service to mankind."

University men were stirred by this criticism, and as the years have passed, an increasing proportion of them have spent as much time out in the world as in the classroom or in the laboratory. They have been urged by administrative officers as well as by the people of the world to be men among men and to test their knowledge by seeing whether it could be applied to the situations to which it related, and this is just what many university teachers are doing to-day and this is why they are regarded by some as truant professors.

Compensations for the Students

There are compensating factors for the students. The man who spends as much time off the campus as he does on it and who derives his knowledge from first-hand contact with things and activities as well as from books is more highly regarded to-day by his students than is the academic type. Students as well as faculties have changed during the last quarter of a century. Students are no longer influenced by bookish teachers. They want to sit in with men who have been out in the world in touch with realities. Present day students are not idealists. They are thoroughgoing realists. They flock into the classes of truant professors and shun the classes of the other type, even though the former can lay no claim whatever to expert teaching. Students do complain about the dull, ineffective methods of our instructors who are engaged in research or in writing, or in advising manufacturers, governmental agents or professional men, but nevertheless they search out these very instructors as teachers and they avoid those who confine themselves strictly to classroom or laboratory.

The truant professor is then the product of the times. He has responded and is now responding to the pressure from the world and from student bodies on college campuses, and no amount of faultfinding will have any effect on his truancy so long as these pressures continue.

State Universities Handicapped by Lack of Endowments

STATE universities have been somewhat handicapped in comparison with private institutions because they have not enjoyed the advantages of endowments upon which they could count for the continued support of special types of work.

Most state universities cannot be sure that they will be favored by the legislatures in their respective states with continuous appropriation of funds adequate to carry on work that has been begun or that ought to be undertaken. The administrative officers of a state university are always apprehensive that a hostile legislature will be elected and will cripple the work of the institution as a whole or in special departments. This apprehension is much more acute and paralyzing in certain states than in others. In Michigan, Illinois, Wisconsin, Minnesota, California, to cite a few instances, there has not been for many years any action by the respective legislatures that has been harmful to the continuance of legitimate university work and the inauguration of new lines of work as opportunity or need made new courses or research desirable. The universities in these states are, however, looked upon with envy and with longing by universities in states where the legislatures are more or less suspicious of or are indifferent to higher education and particularly research.

It is encouraging to note that a beginning has been made in the endowment of state universities. The University of Virginia has just received from an alumnus a gift of five million dollars to be used partly for fellowships and scholarships and partly for the inception and maintenance of courses and research that may be regarded by university authorities as needing support. It is appropriate that the University of Virginia should be the first state university to receive a generous endowment, because it is among the oldest and most distinguished of our educational

institutions. It has played a great rôle in the social and civic life of Virginia and of the nation, and this endowment will enable it to hold its position among the universities of the country situated in states that are better able than is Virginia to make generous appropriations for the promotion of higher education.

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Juvenile Offenders of Yesterday and To-day

MANY persons doubtless can remember the time when children who had committed an offense against social rules and regulations were dealt with according to the same code of criminal procedure that was followed in dealing with adult offenders. A crime was a crime and was regarded as a deliberate assault upon the laws of the land, whether committed by an immature or by a mature person. Penalties were all standardized so that if it could be proved that a child had stolen an orange from a grocery store, say, the prescribed penalty was meted out to him. The trial of children in the courts proceeded according to the same methods as the trial of adult criminals, the aim being to determine whether or not the offender was guilty of the offense.

In an earlier day lawyers and judges treated children who were brought before them as though they were responsible for their behavior. If they were shown to be guilty they were punished according to the specifications applying to the particular crime in question. Twenty years ago the breaking of a law was considered to be due to an evil will and it was believed that the way to cure the malady was to administer pains and penalties.

Go into a juvenile court to-day and note the change that has taken place in the manner of regarding juvenile offenses and especially in the treatment of them. When a young person is brought to trial there is laid before the judge the results of an inquiry made by a competent psychologist, a sociologist or a psychiatrist, or all of them, relating to the offender's intellectual equipment, temperamental trend, physical condition, and to his home and community environment. The judge wants to find out what factors have been operating to lead the child to steal, to destroy property, to set fire to buildings, to engage in brawling on the streets or to indulge in vagrancy.

The judge and all who are assisting him as investigators and as counselors are not concerned primarily with meting out punishment to the young offender. Their aim is to determine in the light of all the data they can secure how best to work out a program for the child so that he will not offend again. Infliction of punishment used to be the objective and the ambition of judges in an earlier day, but this attitude is gone to-day. There is hardly a state in which one may now observe a court in which the judge and his associates are more interested in prescribing penalties for young offenders than they are in ascertaining what causes lie back of offenses and how the offender can be turned from his evil course.

Those who are connected with juvenile courts, allowing for occasional exceptions, are students of child nature and of the sociological conditions that incite children to irregular or disorderly conduct. When a program of reconstruction has been prescribed for a juvenile offender, those who are charged with carrying it out do not as a rule assume the attitude of headsmen toward the juvenile offender. They are counselors rather than jailers or sheriffs. They are more interested in guidance than they are in punishment. In other words, they seek by educational rather than by punitive methods to turn a young offender away from a criminal career and bring him into harmony with the rules and regulations of the community in which he lives.

Schools Responsible for Change

This change which has come about during the last twenty years in the treatment of young offenders has been due principally to the schools rather than to the courts. Before any one in a court of justice thought of studying the factors that contribute to delinquency in childhood and youth, the schools were proclaiming the doctrine that a child or a youth is at any moment the result of forces acting through heredity and through environment, and that criminal conduct could be changed only by modifying the ideas or impulsions or mental set-up that were responsible for misbehavior.

These reflections have been brought on by the fact that the thirtieth anniversary of the birth of the juvenile court in America is now being celebrated. Much is being made of the fact that the juvenile court has been in operation for thirty years, the first one having been established in Chicago in 1899. There is no more significant fact in our social life than that juvenile criminals are now being reeducated or reconditioned rather than merely punished. The experience of juvenile courts in remaking young criminals—there are only two states that have not made provision for special courts for children—should be a source of additional encouragement to educators to carry further than has yet been done the program of reeducation for those who are not well adjusted to modern social regulations.

Practical School Administration: Laying In the Winter's Coal Supply for the School System

By PHILIP LOVEJOY, Assistant Superintendent of Schools, Hamtramck, Mich.

AT THIS time of the year many school executives are considering the purchase of coal. One municipal corporation with which I am acquainted advertised for 1,400 tons of coal and received a number of bids which varied as much as 100 per cent. The chamber of commerce in that city ascertained that the city had asked for such bids and suggested that more complete specifications would enable them to do more economical buying and thus save the public money. Frequently schools send out specifications the same way. Only last year a vendor informed me that he had received a request from one school board for a bid on several hundred reams of paper. Needless to say progressive school boards are securing competent executives who are rapidly putting an end to such practices which, of course, are exceedingly costly, to the public in money and to the school system in instructional results.

Ways to Obtain Specifications

The purchase of coal has so many ramifications that it has been thought wise to set forth some adequate methods for buying this commodity. Naturally a contract is to be entered into. Specifications, therefore, will have to be obtained for contract stipulation. There are two ways to obtain these. The first way is simply to set forth the types of heating units operated by the board of education and ask the prospective vendors to bid on coal that would most adequately permit the heating units to give maximum efficiency. For instance, Columbus, Ohio, states that the board of education operates (a) steam boilers with down drafts with stokers used at three of the schools, and (b) hot air furnaces. It is further pointed out that a good grade of bituminous coal, free from dirt, slate, crop and bone coal will be required, that the mine run must screen 70 per cent lump over 1¼-inch screen and that nut pea and slack must produce 14,000 B.t.u. and contain less than 7 per cent ash, while lump coal must produce 12,000 B.t.u. and contain less than 9 per cent ash. The vendor is then permitted within these broad fields to bid on any type of coal he desires and allowed to set forth his analysis. The engineer of the board must then study the various proffers and recommend purchase to the board.

The second method is to have the school maintenance engineer make an exhaustive study of the system of heating throughout the school plant and, in conjunction with heating experts, including both the installers and local industrial engineers, determine the type of coal that will give the best heat value in that system. All the questions as to type will be set forth in this study but the results only will be sent to the coal vendor. The question of whether the system is high pressure or low pressure will be a considerable factor. If hot air is used, is the air recirculated? How much staff is available for firing or are automatic stokers to be used? What size coal shall be used? Shall it be mine run? Shall it be pulverized and blown through the stokers? Each system will be different and each system must be studied by the maintenance engineer or the person responsible for the heating.

The method used in the Hamtramck Public Schools was adopted as a result of a study of the heating system and the results obtained by different methods. The specifications are the result of local study, coupled with expert advice from the engineers of the Dodge division of the Chrysler Motor Corporation together with the best business practices devised by the local authorities, plus some of the ideas developed by the Columbus Board of Education, under the auspices of G. E. Roudebush, assistant superintendent.

Specifications for Hamtramck Schools

The specifications sent out this year for soft coal were pronounced by some of the largest coal companies in Detroit as being the most complete they had ever handled. It is to be noticed that nothing is left out. All details are included in the original bid request.

This contract made this.....day of .....1929, between the coal company of .....as party of the first part and the Board of Education of the School District of the City of Hamtramck, County of Wayne, State of Michigan, as party of the second part.

WITNESSETH: That said.....party of the first part, according to bid of..... in consideration of the sum of.....per ton (2,000 pounds) to be to them duly paid as hereinafter specified, does agree to sell and deliver to the said party of the second part, in manner and under the conditions hereinafter set forth, approximately three thousand (3,000) tons more or less, of soft coal according to the following specifications:

1. Coal shall be a genuine Harlan coal from the Harlan seam, or equivalent, said coal not to be less than 4-inch lump—duly screened upon arrival in the yards.

2. Coal shall have an analysis showing:
   Ash content not to exceed 3%.
   B.t.u. not less than 14,200.
   Sulphur not more than 1%.
   Volatile matter not more than 40%.
   Moisture not more than 3%.
   Fixed carbon not less than 55%.

3. These averages shall be derived from tests made by the Detroit Testing Laboratory from samples taken by the board of education from any bin at any time. The manner of taking these samples for the basis of payment and rejection shall be as follows:

At the time of filling the bins one sample shall be taken from each bin and a separate analysis made for each sample so selected. For the basis of adjustment under the terms of this contract the average of the analyses so made shall be the determining factor. A representative of the vendor must be present when the samples are selected but these samples must be taken at random. The cost of the tests shall be borne by the board of education.

Delivery Conditions Cited

It is further agreed that the following conditions of delivery shall be valid under the terms of this contract:

1. All school bins shall be completely filled by July 1, 1929, and said bins shall be added to from time to time at the request of the board of education or the duly authorized representative of the board, during the Fall of 1929 and Spring of 1930 until the amount of the contract, more or less according to the needs has been delivered. Delivery is to be made to bins in these schools:
   Holbrook school, Alice Avenue.
   Carpenter school, Carpenter and McDougall.
   Dickinson school, Norwalk Street.
   Kosciuszko, Fleming and Burger.
   Whitney school, Edwin and Lumpkin.
   Playfair school, Playfair Avenue.
   High-school group, Wyandotte Street.

2. All coal is to be trimmed in the bins.

3. The party of the first part shall see that the shipper sends directly to the board of education a duplicate copy of the bill of lading. On arrival the car is to be checked by a representative of the board of education and all deliveries from said car shall be checked by a representative of the board of education. In checking the deliveries the representative of the board of education shall see that coal is taken from the cars mentioned in the accepted bills of lading and that the weights of coal so delivered agrees with those on the truck delivery slips.

4. Weights of coal may be checked by the board of education at the scale maintained by the city of Hamtramck.

5. The minimum capacity of delivery service under the terms of this contract shall be sufficient to represent a combined capacity of 50 tons per trip.

6. The dealer is to give at least twenty-four (24) hours' notice of intention to deliver and time delivery will start.

Payment Periods Designated

7. BASIS OF PAYMENTS: Payments will be made immediately after the first and third Mondays of each month on all invoices received prior to the preceding Wednesday and for which a chemical analysis has been received from the Detroit Testing Laboratory.

Payments on coal specified will be made on the basis of the price made herein corrected as follows for variations plus or minus.

Considering coal on a "dry coal" basis no correction in price will be made for variations of two per cent (2%) or less in the number of British thermal units from the guaranteed standard of 14,200. That is, if the B.t.u.'s run between 13,916 and 14,484 no correction in price will be made. Where the variation in the B.t.u.'s exceeds two per cent (2%) of this standard the following formula will determine the payment price:

$$\frac{\text{B.t.u. (coal delivered)}}{14{,}200} \times (\text{contract price}) = \text{the payment price.}$$

Correction price to be figured to the nearest tenth of a cent.

8. ASH PENALTIES: For all coal by analysis that contains less ash on a dry coal basis than 3%, a premium of 15 cents per ton for each whole per cent less will be paid.

An increase in the ash content of 2% above the contract standard of 3% will be tolerated without exacting a penalty. When such ash content

is greater than 5% deduction will be made according to the following table:

Ash Content	*To Be Deducted*
From: 5.01 to 6%	9c a ton
6.01 to 7%	11c a ton
7.01 to 8%	14c a ton
8.01 to 9%	19c a ton
9.01 to 10%	25c a ton
10.01 to 11%	32c a ton
11.01 to 12%	42c a ton

9. This contract is not valid until said..... Company, party of the first part furnishes to said board of education a bond in the amount of five thousand ($5,000) dollars for the faithful performance of all items of this contract, said bond to be executed by a responsible surety company, and duly admitted by the insurance commissioner of the state of Michigan.

In witness whereof, the parties hereto have hereunto set their hands and seals, the day of the year first above mentioned. (Executed in duplicate.)

In presence of:

.....

BY:

.....

Party of the first part

THE BOARD OF EDUCATION,
City of Hamtramck, Mich.

.....
President

.....
Secretary

.....
Treasurer

.....
Trustee

.....
Trustee

.....
Trustee

Several dealers have asked whether the board of education trusted any coal dealers or any other people for that matter. The answer is "yes," but the board of education is spending public money and to that end has desired to have complete evidence of just what it was getting and paying for. The entire procedure is in writing from the inception to the final consumption. There are no loopholes. There must be no loopholes in public finance. Specifications must be complete.

It may be stated that if there is no one in the system who can prepare adequate specifications for the local plant, certainly there are interested industries not far distant that will be glad to help. Engineers of the installation companies will be glad to make recommendations. Of course we are assuming that a heating system is already installed and coal is being purchased to fit that system. This article does not concern itself with the selection of new heating plants. That is a different problem. The question of cheaper coal enters into the recommendations. Pulverized coal may be obtained for practically nothing. Freight must be paid. But this coal has to be fed through specially constructed stokers. Are the stokers less expensive in capital outlay and maintenance and interest on the investment than are the hand firing methods? For how many months of the year must fires be maintained? What is the index of labor cost in the community? These questions and the answers to them will help to determine the initial installation. After that, coal is to be specified that will meet requirements of the system.

Analysis of Bids Important

After bids are received they must be adequately analyzed. The other day a school board received bids on soft coal mine run and slack with a guaranted B.t.u. of 14,900. The board accepted the bid from that company on that specification without question, although the larger coal companies that had placed bids vehemently protested. The B.t.u.'s were high and the price was low. Would an investigation by an interested taxpayer result in complete vindication of the purchasing department?

Even after the coal is received it must be analyzed and checked to see that it meets the specifications. A special method of payment will compel this. The best type of contract calls for such a method, because even after that, records must be taken of consumption balanced against the temperature of the outside air and the temperature of the rooms. The cost of raising temperatures one degree must be ascertained to discover whether the plant is operating efficiently. The Hamtramck Board of Education enters into contract with the vendor that submits the best proposition under the bid terms.

A word should be said about the futility of comparison of specifications or of prices. There are so many variables that comparisons would be more than odious. The type of heating unit, the type of firing, the type of coal demanded, the ease in filling the bins, the index of purchasing power, the quantity demanded, the speed of delivery and the method of payment are some of these variables, and unless each of them is duly weighed comparisons would be of little value. It is of value, however, to secure adequate contract regulations for other cities so that methods of purchasing may be compared after due consideration has been given to the valuable factors.

Defining the Place of the Teacher in Curriculum Revision

By A. L. THRELKELD, Superintendent, Denver Public Schools, Denver, Colo.

THE teacher-pupil situation should be the focal point for any program of curriculum revision. Curriculum revision should begin and end here. In other words, curriculum construction is the problem of the teacher as he faces the pupil who is to learn. From the point of view of the schools it is primarily the teacher's problem. This is a problem made up in terms of pupil nature, social inheritance and the needs of present day life. Around this problem centers all that can actually be called a curriculum revision program.

Principal, supervisor, research expert, all must participate if the best possible pupil-learning situation is to be created. They are essential but they should be thought of as extensions of the teacher. The teacher must reach out to the principal, to the supervisor, to various specialists for the contributions they severally can make to the problem that he faces. No modern teacher can be sufficient unto himself. He must rely upon what has been contributed by research investigations wherever they may have occurred. He must rely upon the expert study of method the principal and supervisor have made. He must rely upon the social service of the attendance department, upon the visiting teacher, upon the health service of the medical and physical education departments and upon the other special agencies that in a modern school system are now at the command of the teacher who knows how to use them.

In a school system having a department of curriculum revision the teacher must depend upon the director of this department for assistance in procuring curriculum materials for the classroom situation, such a director working through and with teacher committees. Whether these materials are furnished in a printed course of study, in several such courses or in any other way are details that may be changed from time to time as conditions warrant. The essential point is that the teacher facing the pupil who is to learn is the center of the process.

Obviously this point of view demands that all who are in a position to contribute to the learning process of the pupil participate in the construction of the curriculum. This participation begins when the classroom teacher is actively interested in contributing to the growth of his pupils. This interest reaches out in various directions. Only to the extent that it does reach out have we a sound basis for the important contributions that the experts are in a position to make. Their insights and knowledges cannot be forced into this learning process. They must come in response to a felt need. Coming in response to such a need, they serve their true purpose. In this situation, that which they have to contribute actually functions.

Classroom Teacher Must Participate

Looking at it from this point of view it is clear that a curriculum revision program cannot be measured in terms of what is found between the covers of printed courses of study. Such an examination would tell only part of the story. The most vital thing would be left out of consideration, namely, to what extent this course of study is genuinely accepted by the teacher as an important help in his teaching. In the first place, does the teacher understand what is in the course of study and does he accept it as being appropriate to his task? No course of study, from a practical point of view, is worth any more to a school system than the extent to which it actually results in worth while growth on the part of the pupils. It cannot be judged apart from this.

Then quite aside from what may have been worked out in research laboratories, quite aside from what may now be the best theory that students of education possess, no curriculum revision program can succeed if it is limited to a consideration of these sources of material. If the active participation of the classroom teacher is left out of the plan, the whole structure is superficial and will amount to nothing.

It is not my intention to leave the impression that supervisors, principals, curriculum experts and research investigators are not important as compared to the teacher. They are essential. The conception here presented is that they function only as the teacher reaches out for help. Without the intelligent reachings out of the teacher, they are impotent.

Your Every-day Problems

JOHN GUY FOWLKES, THE UNIVERSITY OF WISCONSIN, DIRECTOR

This department will be devoted to an informal discussion of problems arising in the every-day life of principals and superintendents. The following discussions are based on answers to inquiries received recently by the director of this department. Similar inquiries are invited, and should be addressed to Dr. John Guy Fowlkes, Department of Education, University of Wisconsin, Madison, Wis.

The Economic Status of the Supervising Principal and That of Other Citizens

Many communities have been, and are in the midst of adjusting the salaries of professional educators in the local school system. In several cases, rather ugly insinuations have been made concerning the "easy life and large income" of the supervising principals or superintendents of schools in the smaller cities in comparison with the economic status of other citizens in such cities. Several inquiries have been made as to the economic status of various groups in comparison with that of the supervising principals. Because of these inquiries, a digest of a study made in 1923 is presented.

The purpose of the study was to ascertain the financial status of the supervising principal in Wisconsin. The financial status of the supervising principal was compared to that of other professional men—lawyers, physicians and dentists—in the same communities. Data for the study were gathered from state income tax returns for 1923 and from a questionnaire that was mailed to all men included in the study.

TABLE I—MEDIAN ANNUAL SALARIES

Profession	*Amount*	*Range*	
Physicians	$2,468.00	$ 500 to over	$5,000
Dentists	2,312.50	500 to	5,000
Supervising Principals	2,183.00	1,000 to	3,500
Lawyers	2,166.50	500 to over	5,000

The data include figures on the physicians, lawyers, dentists and supervising principals in cities and villages where the schools are in charge of a supervising principal in twelve counties, or 19 per cent of all the counties in the state. Approximately 20 per cent of the population of Wisconsin, exclusive of first, second and third class cities is represented in the study. The following counties are included: Brown, Calumet, Columbia, Dane, Door, Green Lake, Jefferson, Kewaunee, Manitowoc, Marquette, Waukesha and Waushara.

In this study, salary means the payment that the individual received in return for his personal services.

Total annual income includes the salary of the individual plus his income from all other sources.

TABLE II—MEDIAN TOTAL ANNUAL INCOMES

Profession	*Amount*	*Range*	
Physicians	$2,833.00	$ 750 to over	$7,500
Lawyers	2,750.00	1,250 to	7,500
Dentists	2,500.00	750 to	5,500
Supervising Principals	2,343.00	1,000 to	6,500

Total capital wealth may be defined as the money value of all that the individual possesses such as property, investments, mortgages and home.

The accompanying tables present the data that were collected for the study.

The conclusions deduced from this study are presented as follows:

1. The supervising principal is receiving a smaller reward for his services than the median rewards of the dentist and the physician. The principal is receiving a little larger reward than the average lawyer.

2. The median total annual income of the supervising principal is less than the median total annual incomes of the dentists, physicians and lawyers.

TABLE III—MEDIAN TOTAL CAPITAL WEALTH

Profession	*Amount*	*Range*	
Lawyers	$12,750	$ 50 to over	$50,000
Dentists	8,800	4,000 to	25,000
Physicians	7,800	3,000 to over	50,000
Supervising Principals	1,250	3,000 to	35,000

3. The median number of years' experience

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1914 1929

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of the supervising principal is nine years, which is less than one-half the median number of years' experience of the men in the other professions.

TABLE IV—MEDIAN NUMBER OF YEARS' EXPERIENCE

Profession	*Experience*	*Range*
Lawyers	21 years	5 to 39 years
Dentists	19 years	5 to 33 years
Physicians	18 years	3 to over 45 years
Supervising Principals	9 years	1 to 43 years

There are two probable reasons for the supervising principal's having a comparatively short term of experience: The supervising principals in the smaller communities are constantly accepting positions as superintendents of the larger schools, thus leaving the position of supervising principal open to men of less experience; many of the men who start out as supervising principals leave this profession to enter some other field of work, thus leaving their positions open.

4. In accumulated wealth the supervising principal ranks far below the other professions.

TABLE V—MEDIAN NUMBER OF YEARS' EXPERIENCE IN PRESENT POSITION

Profession	*Experience*	*Range*
Lawyers	21 years	5 to over 30 years
Dentists	16 years	3 to 29 years
Physicians	15 years	3 to over 30 years
Supervising Principals	4 years	1 to over 30 years

This may be due to: the comparatively short term of experience; the fact that the supervising principal's annual income has approximated the annual income of the other professions only for the last six or seven years; the possibility that supervising principals may be poor business men.

5. Only 26 per cent of the supervising principals own their own homes. This is about one-third of the percentage of men in the other professions who own their own homes. This small percentage of supervising principals who own their own homes may be due to the lack of capital to invest and the nomadic nature of the work.

6. The median assessed valuation of the homes of the supervising principals is only about

TABLE VI—PERCENTAGE OF EACH GROUP THAT OWNED HOMES

Profession	*Per Cent*
Lawyers	87
Physicians	75
Dentists	75
Supervising Principals	26

two-thirds of the assessed valuation of the homes of the men in the other professions.

7. The median college preparation of the supervising principal is four and one-quarter years which makes him the second best trained in the group of four professions considered. Since he ranks last in annual salary, it may be seen that, experience disregarded, he is not receiving the reward for his services to which he is entitled.

8. The salary of the supervising principal apparently is influenced but little by the number of years of college training he has had. (Correlation between these two factors is .06.)

9. The accumulated wealth of the supervising principal increases as his experience increases. (The correlation between these is .47.)

TABLE VII—MEDIAN ASSESSED VALUATION OF HOMES (1924)

Profession	*Valuation*	*Range*
Lawyers	$5,000	$1,000 to $ 9,000
Physicians	5,000	1,000 to over 12,000
Dentists	4,833	2,000 to 9,000
Supervising Principals	3,300	2,000 to 7,000

10. The supervising principal is the only one of the four professions who secures a definite increase in salary with an increase in experience all through his career.

11. When a select group of supervising principals, dentists and physicians is considered—that is, supervising principals with less than twelve years of experience, dentists with less than twenty years of experience and physicians with less than eighteen years of experience, it is found that the supervising principal is securing the most definite increase in salary with reference to his experience. The reason for these arbitrary limits is that outside of these limits there appears

TABLE VIII—MEDIAN NUMBER OF YEARS' TRAINING OF COLLEGE GRADE

Profession	*Training*	*Range*
Physicians	5.00 years	3 to over 8 years
Supervising Principals	4.25 years	0 to 7 years
Dentists	3.75 years	1 to 8 years
Lawyers	3.50 years	0 to 7 years

to be an inverse relation between the salary and the experience. This may be due to the fact that after a certain period of experience in small communities the successful men of the professions often move to larger communities. The more or less unsuccessful men of the profession are more likely to continue to practice in the small community and thus pull down the correlation between salary and experience.

In light of these findings, it seems evident that the chief executive officer of school systems in the smaller communities of Wisconsin, when compared with lawyers, physicians and dentists, is not overpaid.

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News of the Month

Physical Education Schools Absorbed by Larger Institutions

The Sargent School of Physical Education, Cambridge, Mass., for nearly fifty years a landmark in New England private schools, is to be absorbed by Boston University, according to announcement appearing in a recent issue of *Private School News*. Dr. Ledyard Sargent, principal since 1924, has presented the school to the university, under whose direction a degree in physical education and allied academic subjects will be given.

Another famous physical educational school of the East, the Central School of Hygiene and Physical Education, New York City, will become the department of physical education and hygiene of Russell Sage College, Troy, N. Y., this Fall, it is announced. Under the new arrangement a four-year course leading to a bachelor of science degree in physical education will be given. Pending the completion of the extensive new campus planned for Russell Sage College, the physical education students of the Central School will continue their work in New York City at the present school.

Bureau of Education to Study Secondary Schools

Under authorization of Congress, the United States Bureau of Education will undertake a study of the organization, administration, financing and work of secondary schools and their articulation with elementary and higher education schools.

The survey will cost approximately $225,000, of which $50,000 will be available during the fiscal year 1930, according to announcement in *School Life*, published by the Bureau of Education. The survey of secondary education will be parallel to the survey of land-grant colleges now being made under the direction of the commissioner of education.

Unusual Engineering Problem Faces Builders of Alaska School

An unusual engineering problem faces the Alaskan division of the Federal Bureau of Education on King Island in Bering Strait, 125 miles from Nome, where plans are under way for construction of a new school, the *Journal of Education* states.

For years the Eskimos of that district have been saving the choice part of their island as the site for a school. Recent congressional appropriations now make construction possible but the builders face an exceptional problem in architecture for the school will have to be placed on the steep slope of the island where natives build their houses suspended from poles with but one edge of the dwelling resting on the ground. The houses are constructed almost entirely of hides, with only the floors of wood, the roofs and walls being fastened to poles that reach above the roofs from the ground.

The school probably will be built in three terraces. On the lower level the pupils will be seated. On a second level, a few feet higher, will be the teacher's desk, and still higher on the hillside there will be a section for the teacher's quarters. The school will accommodate thirty pupils.

Johns Hopkins Establishes New Degrees in Education

The trustees of the Johns Hopkins University, Baltimore, acting upon the recommendation of the academic council, recently created a new school of higher studies in education and established two new degrees of master of education and doctor of education, according to announcement in *School and Society*. The trustees also created an advisory board of the school of higher studies in education that will have charge of arrangements for the instruction of advanced students and of the examinations for the new degrees.

Through this action the trustees of the university have expressed their recognition of the distinctive position of public and private schools in present day life, of the institutional need for the specific training of school officers and teachers, and of a more intensive and systematic study of educational problems, the magazine states.

Premier of Canada Plans Reformation of Educational System

Reformation of the educational system of the province of Ontario, Canada, by means of legislation which he will introduce at the next session of parliament, is planned by G. Howard Ferguson, premier of Ontario.

The premier's proposal is, in brief, to provide two years of high-school work in the public schools of the province and one year of university course in the high schools, according to reports in the *Christian Science Monitor*. Back of the plan is the idea that such a system would enable young people in the rural districts to remain longer in their own homes and under parental guidance than is now possible, and that it would also mean extensive saving in costs to rural persons who send their children to high schools or universities.

The premier, who is also minister of education, declared that his ideal is "to make possible for every child in the province, regardless of its location, equal educational opportunity." He believes that by extending the public-school course to provide for children up to sixteen instead of fourteen years as at present, he will help to accomplish that purpose.

Since the lower school work now given in high schools would be given in public schools under the new plan, the

News of the Month

premier proposes to give the high schools new work, and to do that, he said, he would have high schools impart tuition for first-year university work. There are many failures now in first-year university work, he said, and the new plan would automatically do a great deal of culling and sifting.

Mr. Ferguson stated that the new system would result in a great saving of money, since it costs the government $400 a year for each university student, and costs the parents from $800 to $1,000 and more.

Improvement Program Under Way for Birmingham Schools

An improvement program that will provide new buildings or additions for five public schools in Birmingham, Ala., is under way during the summer months.

Preliminary sketches have been approved for the first unit of the West End High School, which will be erected on a thirteen-acre site and will accommodate 600 pupils.

A new unit is being constructed for the North Birmingham Elementary School to replace the old portion that burned last Spring.

Work on the new Erskine Ramsay Technical High School, to cost $283,109, has progressed to the first floor level. This building is designed to accommodate 975 pupils.

At the Gorgas Elementary School two classrooms and a lunch-auditorium room are being erected as an addition and at the Industrial High School for Negroes two one-story additions of eight classrooms each are under way.

New Educational Directory Is Published

Bulletin (1929) No. 1, United States Department of the Interior, Bureau of Education, has recently been distributed. It is an educational directory containing the names of those in the United States Bureau of Education, state departments of education, county superintendents, city superintendents, university and college presidents, junior college presidents, heads of departments of education, presidents or deans of different types of schools and colleges, public and society libraries, educational associations and educational periodicals.

University of Vermont Receives Conditional Trust Fund

The University of Vermont is recipient of a conditional trust fund of between $2,000,000 and $3,000,000 under terms of the will of the late James B. Wilbur, Chicago banker and summer resident of Manchester, Vt. A trust fund of $500,000 has been set aside for a son, James B. Wilbur, New Britain, Conn., and upon his death this additional fund also will go to the university, a recent issue of *School and Society* states.

In his will Mr. Wilbur requires the university to limit its attendance to 1,000 students annually, preference to be given to Vermont boys. The quota may be increased at the rate of 250 for every 100,000 increase in the state's population since the federal census in 1920. Should the University of Vermont fail to meet the restrictions imposed under the trust, the bequests go to the trust fund board of the Library of Congress.

Bequests also were made by Mr. Wilbur as follows: $100,000 to the Vermont Historical Society; $25,000 to the Henry W. Putnam Memorial Hospital, Bennington, Vt., $25,000 to Western Reserve Historical Society, Cleveland; $100,000 to the trust fund board of the Library of Congress; $100,000 to the New York Historical Society, and $100,000 to the New York Times for the Hundred Neediest Cases Fund.

Cornerstone Placed for New High School at Ossining

The cornerstone of the new $750,000 Junior-Senior High School at Ossining, N. Y., was placed recently at an impressive ceremony in which prominent educators of the district participated.

The new building will accommodate 900 pupils and will include an auditorium seating 1,000 persons. The building is being erected at no cost to the taxpayers of the original school district, Paul M. Pierson, president, board of education, told the audience at the cornerstone laying program. Mr. Pierson stated that when he became a member of the board of education the school district embraced only the village of Ossining. Since then the trustees have succeeded in taking in three other districts with a combined assessment valuation of more than $4,000,000. Assuming a school tax of only $10 per thousand, the taxes to be derived from this property in the next thirty years will pay the cost and interest of the new building, Mr. Pierson declared, without adding a burden upon the community.

Improved Conditions in Rural Schools Are Shown

Improved conditions in the building and equipment of rural schools are indicated in information compiled recently by the United States Bureau of Education, according to the July issue of the *Journal of Education.*

Citing Michigan as an example showing the vast improvement in country schools, the report states that in 1915 only twenty-two rural school buildings in that state met modern standards in lighting, heating, ventilation, sanitation, seating and interior arrangements. On January 1, 1929, the report continues, there were 985 such buildings.

The report also states, however, that there are still many rural communities with deplorable building facilities where little or no improvement has been made within fifty years.

News of the Month

University of North Carolina Starts Library School

The Carnegie Corporation of New York has presented a fund of $100,000 to the University of North Carolina for the establishment of a library school for the training of librarians in connection with the opening of the new university library. The library building has just been completed at a cost of $625,000.

The gift from the Carnegie Corporation will be spread over a period of five years, according to announcement in *School and Society*, and at the conclusion of this term the university will be morally obligated to carry on the librarians' school, the maintenance of which then will amount to about $16,000 annually.

This school will be the only one of its kind in the South other than the Carnegie Library School at Atlanta.

Adult Education Subject of Conference in England

A conference on adult education will be held in Cambridge, England, August 22 to 29 under the auspices of the World Association of Education. Many phases of adult education, both in theory and in practice, will be discussed by speakers from various countries including England, the United States, India, Poland, Czecho-Slovakia, Austria, Germany, Holland, Denmark, Norway, Belgium, Japan and Sweden.

Bond Issue Denied but School Will Be Built Anyhow

Although citizens of Marlboro Township, Pa., refused to approve a bond issue for construction of a new school, directors of the district have taken the alternative course offered under the law and will have a new school anyway by saddling the entire cost of the project upon the citizens, through an increased tax levy over a two-year period.

Marlboro will join with Green Lane borough in erecting the school which will cost $30,000. Green Lane citizens approved a bond issue for their share of the cost at a special election.

Cochin State Sponsors Extensive Educational Program

In an effort to educate the depressed classes of Cochin State, India, the government is spending nearly 1,500,000 rupees or a little over sixteen per cent of its total revenue on an educational program, according to information appearing in a recent issue of the *Journal of Education*.

The children belonging to the depressed classes are given free education, special scholarships, food, clothes and books. A large number of night schools have been started for them in areas where, on account of the necessity for earning wages, they are unable to attend day schools. Last year about 12,000 children of this class were receiving some kind of education. The state also maintains thirty-five industrial schools in which are enrolled more than 1,000 pupils.

Citizens Incorporate to Organize University of Kansas City

A charter has been granted recently to 100 citizen incorporators for the organization of a civic, nonsectarian institution of higher learning to be known as "The University of Kansas City," according to reports appearing in a recent issue of *School and Society*.

The general plans are said to have the approval of several of the larger endowment funds. The organizers propose merging the new institution with the Lincoln and Lee University, which opened in Kansas City four years ago. The Lincoln and Lee site, comprising 230 acres, is just outside the city limits. No buildings have been erected there, although downtown units are in operation, and the university has assets of about $1,250,000. The charter for the proposed University of Kansas City contemplates a site near the center of Kansas City, where about eighty acres are now available. The university would be on grounds of the William R. Nelson estate, adjoining the William R. Nelson Gallery of Art, soon to be built; the Atkins Museum of Fine Arts, also to be erected soon; the Kansas City Art Institute, and the Barstow School for Girls, a private institution. Affiliation with these and other institutions already functioning is part of the plan.

The University of Kansas charter states that "the university shall be nonsectarian in control and in fact, but that it shall be the duty of the board of trustees to encourage the development of proper means and instrumentalities designed to exercise wholesome moral and religious influence upon the student body."

Identity of Donor to University Is Revealed

Mrs. William C. Kerckhoff, widow of one of Southern California's pioneers and capitalists, has been revealed as donor of the $500,000 gift presented recently to the University of California, Los Angeles, for construction of the student union building, according to *School and Society*.

The building, which will be known as the Kerckhoff Student Union Building, will be a memorial to Mr. Kerckhoff.

New Buildings Under Construction

St. Augustine's School, an institution for colored students at Raleigh, N. C., has started construction of a three-story brick dining hall, a nurses' home, girls' dormitory and a library, totaling an expenditure of $185,000.

The new buildings of Scarritt College, Nashville, Tennessee, are among the most beautiful college groups in the country. Henry C. Hibbs, the architect, has used Acousti-Celotex to absorb echoes in the chapel, the dining hall and the library. The Ryan Sales Company, Acousti-Celotex Contractors.

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DISTRACTING noises are not allowed to destroy concentration in the library of Scarritt College, in Nashville, Tennessee. The clatter of dishes and silverware cannot mar the pleasure of the dinner hour. And the dignity of the chapel service is free from excessive reverbration.

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School .....

News of the Month

Coming Meetings

Arizona State Educational Association.
President, D. M. Hibner.
Secretary, W. T. Machan, principal, Creighton School, Phoenix.
Delegate meeting, December 26-27.

Arkansas Education Association.
President, J. W. Ramsey, superintendent of schools, Fort Smith.
Executive secretary, H. L. Lambert, 220 Glover Building, Little Rock.
Annual meeting, Little Rock, November 14-16.

California Teachers Association.
President, J. M. Gwinn, superintendent city schools, San Francisco.
Secretary, Roy W. Cloud, 508 Sheldon Building, 461 Market Street, San Francisco.
No general meeting. Bay section, Oakland, December 16-20; central section, Fresno, November 25-27; central coast section, Monterey, December 16-20; northern section, Sacramento, October 14-18; north coast section, Eureka, October 7-9; southern section, Los Angeles, December 16-20.

Florida Education Association.
President, J. W. Norman, University of Florida, Gainesville.
Secretary, R. J. Longstreet, Daytona Beach.
Annual meeting, Pensacola, November 29-30.

Illinois State Teachers Association.
President, George D. Wham, Carbondale.
Secretary, Robert C. Poore, Carlinville.
Annual meeting, Springfield, December 26-28.

Indiana State Teachers Association.
President, Ralph N. Tirey, Bloomington.
Secretary, Charles O. Williams, Room 205, Hotel Lincoln, Indianapolis.
Annual meeting, Indianapolis, October 17-19.

Kansas State Teachers Association.
President, L. W. Brooks, Wichita High School, Wichita.
Secretary, F. L. Pinet, 315 West 10th Street, Topeka.
Annual meetings, Kansas City, Topeka, Salina, Wichita, Dodge City and Independence, October 31, November 1-2.

Louisiana Teachers Association.
President, Amy H. Hinrichs, 7336 Irma Street, New Orleans.
Secretary, P. H. Griffith, Box 541, Baton Rouge.
Annual meeting, Alexandria, November 21-23.

Maine Teachers Association.
President, Thomas P. Packard, superintendent of schools, Houlton.
Secretary, Adelbert W. Gordon, State House, Augusta.
Annual meeting, Portland, October 24-25.

Maryland State Teachers Association.
President, Charles W. Sylvester, City Department of Education, Administration Building, Baltimore.
Secretary, Walter H. Davis, principal, high school, Havre de Grace.
Annual meeting, Baltimore, November 29-30.

Minnesota Education Association.
President, George H. Sandberg, superintendent of schools, Rochester.
Secretary, C. G. Schulz, 162 West College Avenue, St. Paul.
No annual meeting in 1929.
Division meetings: St. Cloud, Thief River Falls, Moorhead, Virginia, Oct. 17-19; Mankato, Winona, St. Paul, Oct. 24-26.

Missouri State Teachers Association.
President, M. G. Neale, dean, school of education, University of Missouri, Columbia.
Secretary, E. M. Carter, Missouri State Teachers Association, Columbia.
Annual meeting, St. Louis, November 13-16.

Montana Education Association.
President, Owen D. Speer, superintendent of schools, Deer Lodge.
Secretary, R. J. Cunningham, Box 217, Helena.
Annual conventions: Bozeman, Great Falls and Miles City.
Delegate assembly, place not determined, December 27-28.

Nebraska State Teachers Association.
President, J. A. Doremus, Aurora.
Secretary, Everett M. Hosman, 511 Richards Block, 11th and O Streets, Lincoln.
Annual meeting, Omaha, Lincoln, Norfolk, Alliance, Holdrege, Kearney, October 30-31 and November 1-2.

New Hampshire State Teachers Association.
President, Dana S. Jordan, Lisbon.
Executive secretary, John W. Condon, Derry.
Annual meeting, Litton, October 4-5.

New Jersey State Teachers Association.
President, Raymond B. Gurley, Cleveland Junior High School, Newark.
Secretary, Charles B. Dyke, Short Hills.
Annual meeting, Atlantic City, November 9-12.

New Mexico Educational Association.
President, J. F. Zimmerman, Albuquerque.
Secretary, John Milne, Albuquerque.
Annual meeting, Albuquerque, November 1-2.

New York State Teachers Association.
President, G. Carl Alverson, superintendent of schools, Syracuse.
Executive secretary, Harlan H. Horner, Box 20, Capitol Station, Albany.
Annual meeting, Syracuse, November 25-26.
District meetings: Northern district, Potsdam, October 10-11; central district, Syracuse, October 24-25; eastern district, Albany, October 24-25; southeastern district, New York City, October 24-25; southern district, Binghamton, November 1-2; central western district, Rochester, November 1-2; western district, Buffalo, November 8-9.

North Dakota Education Association.
President, Huldah L. Winsted, Minot.
Secretary, M. E. McCurdy, 11 Magill Block, Fargo.
Annual meeting, Minot, November.

Oregon State Teachers Association.
President, Julia A. Spooner, Holladay Demonstration School, Portland.
Secretary-treasurer, E. F. Carleton, 301 Behnke-Walker Building, 11th and Salmon Streets, Portland.
Annual meeting, Portland, December 26-28.

Pennsylvania State Education Association.
President, C. R. Foster, State Teachers College, Indiana.
Secretary, J. Herbert Kelley, 400 North Third Street, Harrisburg.
Annual meeting, New Castle, December 26-27.

Rhode Island Institute of Instruction.
President, Mrs. Pearl M. T. Remington, 212 Waterman Avenue, East Providence.
Secretary, Clarence W. Bosworth, principal, Cranston High School, Auburn.
Annual meeting, Providence, October 24-26.

Texas State Teachers Association.
President, Rush M. Caldwell, 2527 Ross Avenue, Dallas.
Secretary, R. T. Ellis, 708 Neil P. Anderson Building, Fort Worth.
Annual meeting, Dallas, November 28-30.

Utah Education Association.
President, Arch M. Thurman, 1042 Ramona Avenue, Salt Lake City.
Secretary, D. W. Parratt, 330 East 21st South, Salt Lake City.
Annual meeting, Salt Lake City, October 17-19.

Vermont State Teachers Association.
President, Clayton L. Erwin, deputy commissioner of education, Montpelier.
Secretary, Marion C. Parkhurst, 323 Pearl Street, Burlington.
Annual meeting, Burlington, October 10-12.

Virginia Education Association.
President, R. W. House, principal of schools, Prospect.
Secretary, Cornelius J. Heatwole, Room 1, State Capitol, Richmond.
Annual meeting, Richmond, November 27-30.

Washington Education Association.
President, C. Paine Shangle, superintendent of schools, Sedro-Woolley.
Secretary, Arthur L. Marsh, 707 Lowman Building, Seattle.
Annual meeting, Seattle, October 24-25.
Representative assembly, October 26.

West Virginia State Education Association.
President, J. F. Marsh, state department of education, Charleston.
Secretary, J. H. Hickman, rooms 403-405, Capital City Bank Building, Charleston.
Annual meeting, Huntington, October 31, November 1-2.

Wisconsin Teachers Association.
President, Merle C. Palmer, Columbus.
Secretary, B. E. McCormick, 716 Beaver Building, Madison.
Annual meeting, Milwaukee, November 7-9.

Wyoming State Teachers Association.
President, L. C. Tidball, Cheyenne.
Secretary, B. H. McIntosh, principal, high school, Cheyenne.
Annual meeting, Thermopolis, October 9-11.

News of the Month

Study of English May Become Compulsory in Finland

A bill presented to the national parliament of Finland recently would make the study of English compulsory in all Finnish schools. In describing the bill, Frederick B. Lyon, commercial attaché at Helsingfors, states:

"Increasing trade between Finland and English-speaking countries is reported to have influenced advocates of the proposed bill. Use of English is reported on the increase in Finnish commercial intercourse. It is estimated to be the second most used language exclusive of the official Finnish and Swedish."

Home Assignments Limited for New York Children

Orders notifying all teachers that hereafter no home work shall be assigned to children of the first three grades and a limited amount to the children of the middle and upper grades of the elementary schools, have been issued by William J. O'Shea, superintendent of schools, New York City, according to announcement in the *Virginia Journal of Education.*

New York Schools Ban Pie and Coffee From Menus

Lunch rooms in all New York City grade schools controlled by the Board of Education are no longer serving pie to pupils, following a recent order issued by William J. O'Shea, superintendent of schools. The ban is the result of scientific study of eating, it is declared. Tea and coffee also have been eliminated from the menus because the department does not believe them to be nourishing beverages for young children, the *Journal of Education* states, and "hot dogs" are not expected to remain long although they have not yet been specifically banned.

High-School Attendance Quadruples in Sixteen Years

A survey just completed by the United States Bureau of Education shows that attendance at public high schools in the United States has quadrupled in the last sixteen years.

The figures show that in 1910 the attendance in public high schools was 915,000 but that by 1926 the figure had grown to 3,757,000,000. It had, in fact, multiplied itself by more than four in a brief sixteen years.

In addition to this growth in standard high schools there has come into the field a new agency, the junior high school, which has developed to the point where its attendance is above 1,000,000, of which number more than 300,000 are of high-school rank.

Another striking feature of this situation is the fact that, of those who graduate from these schools, practically 50 per cent go on to some higher institution of learning. This is a much higher percentage than was shown previous to the present decade.

Teacher Training Costs Shown by Government Figures

Per capita costs of students in teacher training institutions in the United States as well as the number of trainees enrolled are increasing, according to statistics compiled by the United States Bureau of Education.

A study of this subject has been made by the government bureau from enrollment figures taken at the end of the second week of each term, quarter, semester or summer term of the year 1927-28, as the typical enrollment for that term or semester, and at the end of thirty-six weeks as a typical year.

This study shows that five state normal schools having an average enrollment of fewer than 200 students have an average per capita cost of $324.43 for the year for all current expenditures; twenty schools with an enrollment between 200 and 399 have an average per capita cost of $373.03; thirteen schools between 400 and 599 have a per capita cost of $265.39; seven schools between 600 and 799 have $304.21, and five schools with an enrollment of 1,000 or more have an average per capita cost of $246.74.

Among state teachers' colleges, sixteen schools with an average annual enrollment of fewer than 400 have an average per capita cost of $439.67; forty schools having an enrollment between 400 and 799 have an average per capita cost of $355.37; twelve schools between 1,200 and 1,599 have $233.51; ten schools between 1,600 and 1,999 have $194.80, and seven schools with an enrollment of 2,000 or more have an average annual per capita cost of $263.46 for all current expenditures.

Teachers' College Alumni Hold Reunion

A two-day reunion program held recently at the Montclair State Teachers' College, Newark, N. J., was concluded with a ceremony marking the placing of a cornerstone for the new demonstration high school under construction on the campus.

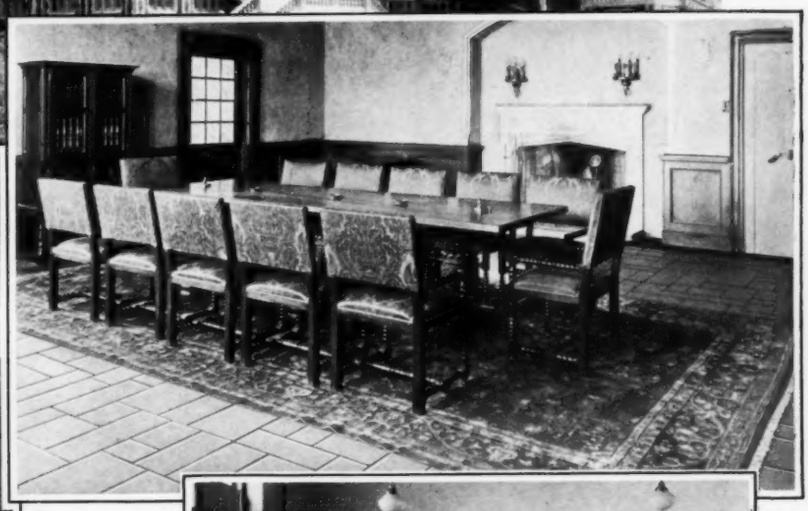
More than 1,000 alumni of the college attended the reunion activities.

Ohio School Opens Class for Crippled Children

A class for crippled children was opened recently at Alliance, Ohio. It enrolled ten children ranging from eight to fifteen years in age, eight of whom had not attended school before on account of their handicap.

Lillian Caldwell is the teacher in charge of the class, which is in a school where hot lunches are available to the children.

Teaneck, New Jersey, can well boast of modern, up-to-the-minute equipment in this fine new high school building.



You, too, would attend meetings in this pleasant board room.

A floor of Armstrong's Jaspé, with green border, endows Teaneck High School's main office with a cheerful, comfortable atmosphere.

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If you have any special floor problems in grade school, prep school, or college, send for our book, "Enduring Floors of Good Taste." It is color-illustrated and presents Armstrong Floor facts. It tells how you can enlist the services of Armstrong's School Service Department. Just write the Armstrong Cork Company, Floor Division, Lancaster, Pennsylvania.

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In the Educational Field

DR. D. B. KRAYBILL, superintendent of schools, Redstone Township, Pa., for the last four years, has been elected superintendent of schools at Wheeling, W. Va.

JOHN W. BROOKER, superintendent of public schools, Cynthiana, Ky., for five years, has resigned his position to become affiliated with the Rockefeller Foundation.

R. G. VINSON, superintendent of schools, Summerville, Ga., for the past four years, has resigned to accept the superintendency of the public schools of Fayetteville, Ga. J. W. BARNHILL, Whigham, Ga., has been elected to succeed MR. VINSON. MR. BARNHILL previously served the Summerville schools in 1917.

JOSEPH L. BLACK has been elected supervising principal of public schools, Parnassus, Pa. He was formerly principal and athletic coach of Apollo High School, Apollo, Pa.

MRS. ALTA OHRT has been elected superintendent of schools, Tehama County, Calif., to succeed PAUL HENDERSON.

DR. J. C. BROWN, president of the Northern Illinois State Teachers' College, DeKalb, Ill., has been appointed superintendent of schools at Pelham, N. Y., to succeed W. H. PILLSBURY, recently elected to the superintendency in Schenectady.

W. E. GAMES, superintendent of public schools, Ridgeway, Ohio, for two years, has accepted the superintendency of the Rosedale centralized public schools in Madison County.

MYRTLE SCOVILLE, one of the two women in Nebraska holding the position of superintendent of a school system, resigned recently because she prefers the closer contact offered by a teaching position.

FRANK M. SOMERVILLE, superintendent of schools, Augusta County, Virginia, for twenty years, has been reelected for a four-year term.

C. C. PEARSALL, supervising principal, Elizabeth, Pa., was elected superintendent of the Pitcairn, Pa., schools recently, succeeding H. FRANK HARE, resigned. MR. HARE has been chosen principal of the Camp Hill schools.

R. ORMENZO BJORK, principal, Mildred, Mont., has been elected superintendent of the Plevna schools.

J. G. MOORE, superintendent of schools, Fargo, N. D., has been reelected to that office for the ninth year.

ELMER K. SEXTON has retired from public-school work after forty-four years in its service. He was connected with the Newark, N. J., school system for thirty-five years, seventeen of which were spent as assistant superintendent, and two terms as acting superintendent. He also was head of the research department.

JACK R. RYAN, principal of the high school, McKinney, Tex., has been elected superintendent of the McKinney schools to fill the vacancy caused by the death of J. S. CARLISLE.

F. N. FRITS, superintendent of schools, Clairton, Pa., has retired from the profession.

WILLIAM P. GALLIGAN, assistant superintendent of schools, Laredo, Tex., has been elected superintendent to fill the unexpired term of the late L. J. CHRISTEN.

FRED E. SMITH, deputy state superintendent of schools, South Dakota, has been appointed superintendent of schools at Windsor, Conn.

N. S. HOLLAND, superintendent of schools, Stamford, Tex., has resigned to accept the superintendency of the Breckenridge, Tex., schools. L. W. JOHNSON has been chosen to succeed MR. HOLLAND in the Stamford schools.

C. C. CONRAD, superintendent of schools, Perry, Mo., succeeds R. H. WEAKS as head of the schools at Jackson, Mo.

JESSE L. THOMPSON, formerly superintendent of schools, Bainbridge, Ohio, has been appointed research intern worker in the school system of Newburgh, N. Y.

H. J. WOOLDRIDGE has been elected superintendent of the Franklin Parish, La., schools. He succeeds J. L. MCDUFF.

MR. AND MRS. CHARLES AIKEN will direct the operation of Whiting Hall, South Sudbury, Mass., next year. For the past two years MR. AIKEN has been academic head of the Bridgman School, Shirley, Mass.

J. LUCAS CAMPBELL, dean of the junior college and principal of the high school, Jefferson City, Mo., has been elected superintendent of schools at Carthage, Mo.

VERNON H. MCCLURE, principal of the high school, Welch, Okla., has been elected superintendent of the Welch school system.

G. W. TODD, superintendent, Ft. Lupton, Colo., has been elected superintendent of schools at Lewiston, Ida.

GEORGE L. PLIMPTON, head master, Tilton School, Tilton, N. H., since 1896, resigned in June. Under MR. PLIMPTON'S direction the school enrollment has grown from eleven to 350 pupils and twenty new buildings have been added to the school plant.

CHARLOTTE WIGGIN, principal, Potomac School, Washington, D. C., since 1927, has announced her resignation. She will be succeeded by DOROTHEA STILLMAN of Hope Farm.

CHARLES H. JONES, registrar and acting principal, Princeton Preparatory School, Princeton, N. J., has been chosen as associate head master of Silver Bay School, Lake George, N. Y. He will be in charge of the school's administration, allowing ROBERT CARVER FRENCH, head master, time for more outside work and greater contact with parents.

JAMES KILLIUS, principal, Johnstown High School, Johnstown, Pa., for the past three years, has been elected to the superintendency of the Johnstown schools to fill the unexpired term of the late DR. S. J. SLAWSON. MR. KILLIUS has been acting superintendent since DOCTOR SLAWSON was forced to give up his duties last February because of the illness which resulted in his death.

In the Educational Field

I. O. WINSLOW, superintendent of schools, Providence, R. I., for seventeen years, has been made superintendent-emeritus.

DR. P. P. CLAXTON, superintendent of schools, Tulsa, Okla., for the past six years and prominent in national educational circles, has retired. He was formerly superintendent of schools at Asheville, N. C. DOCTOR CLAXTON is succeeded in the Tulsa office by MERLE G. PRUNTY, principal, Central High School, Tulsa.

LESTER R. STEIG has been reelected superintendent of schools at Glen Ullin, N. D.

J. NELSON MOWLS, formerly high school principal, Bellevue, Pa., has been elected superintendent of the Bellevue schools.

W. C. CONRAD, former superintendent of schools, Venice, Calif., has been promoted to the assistant superintendency at Los Angeles, where he has recently been in charge of the division of libraries and textbook activities for the high schools.

CHARLES H. CAMPER has been reelected as superintendent of schools and clerk of the board of education, Chico, Calif. MR. CAMPER has been superintendent of the Chico schools for many years.

M. W. LONGMAN, superintendent of schools, Muskegon, Mich., for eight years, recently declined reelection. He has been succeeded by JOHN CRAIG.

WILLIAM C. GRAHAM, principal of the high school, Wilkinsbuurg, Ja., has been named to succeed the late WILLIAM H. MARTIN, superintendent.

R. H. BROWN has been reelected superintendent of schools, St. Cloud, Minn.

GEORGE O. BROHAUGH, superintendent of schools, Willmar, Minn., for ten years, resigned recently.

EDGAR S. STOVER, principal of the high school, Bloomfield, N. J., and secretary of the board of education for sixteen years, has been elected superintendent of the Bloomfield schools, filling the vacancy caused by the death of GEORGE MORRIS, who headed the schools for twenty-four years.

S. D. LARGENT, superintendent of public schools, Great Falls, Mont., for thirty-one years, has retired from the profession. He is succeeded by IRVING W. SMITH.

F. H. BARBEE, Kansas City, has been elected superintendent of public schools at St. Joseph, Mo.

C. A. BEAVER has been elected superintendent of schools at Yankton, S. D., succeeding HENRY BULLESFIELD.

PROF. SARAH HINCKS, department of English, Smith College, has been elected principal of the Shady Hill Country Day School, Chestnut Hill, Pa.

GAYLORD W. DOUGLASS, head master, Wilbraham Academy, Wilbraham, Mass., since 1911, has announced his resignation. DR. RALPH E. PECK, at present head master of Bucksport Seminary, Bucksport, Me., will succeed MR. DOUGLASS, who plans to study abroad.

JOHN R. P. FRENCH, head master, Derby Academy, Hingham, Mass., will become principal of Cambridge-Haskell School, Cambridge, Mass., in the Fall of 1930, it has been announced. MR. FRENCH will succeed MRS. HOPE CONKLIN MACINTOSH, principal since 1922, who resigned in June to join her husband, a professor of theology at Yale. During the coming year MRS. MACINTOSH will be acting principal of the lower school of Hamden Hall, New Haven, Conn. Until MR. FRENCH takes up his new duties at Cambridge-Haskell School MRS. GERTRUDE B. CLARK, head of the boarding department, will act as principal.

A. ETHEL BORDEN, formerly connected with the Santa Barbara Girls' School and Scarborough School, California, will become principal of Friends' Academy, New Bedford, Mass., this Fall.

A. V. MCGLOTHING, superintendent of schools, Waelder, Tex., has resigned.

CLARENCE RUBADO, formerly superintendent of schools, Plymouth, Wis., has been appointed director of elementary education at Louisville, Ky.

REQUA W. BELL, superintendent of schools, Wilson, Okla., has resigned to complete his work for a doctor's degree at Columbia University.

ROSE K. BRANDT, former rural superintendent of schools for Montana, has been appointed to the department of elementary education, Bureau of Indian Affairs, United States Department of the Interior.

H. O. RODGERS is the new superintendent of schools at Livingston Parish, La., succeeding E. S. EASTERLY.

O. E. HUEY, principal of the high school, Hosston, La., has been elected superintendent of the West Carroll Parish.

FREDERICK G. NEEL, superintendent of schools, Fairmont, Ind., has resigned to accept the principalship at Ellettsville.

S. C. SHAW has been named head of the Grant Parish, La., schools.

JOHN G. ROSSMAN, assistant superintendent of schools, Gary, Ind., has been chosen head of the East Chicago school succeeding J. W. ASBURY, resigned.

GUY T. MCBRIDE, formerly superintendent of schools, Gulf, Tex., has been elected superintendent of the schools of Boling independent district, Tex.

EUGENE W. PRUITT, superintendent of schools, Somerset County, Md., has accepted the superintendency for Talbot county. He will fill the vacancy caused by the death of PROF. O. M. FOGLE.

DR. JOHN H. DYER, principal, Central High School, Scranton, Pa., since 1925, has been elected superintendent of the Scranton schools. DOCTOR DYER succeeds the late RHYS POWELL, who died last April.

E. R. BOWDOIN, superintendent of schools, Lubec, Me., for five years, has resigned his position to become superintendent of schools at Bethel, Me.

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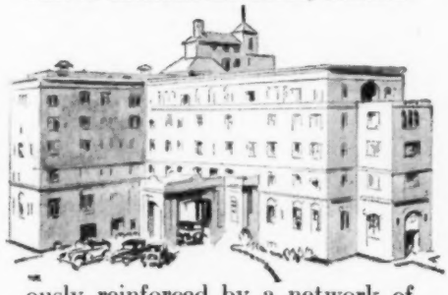

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10. Requires no change in customary operations, either lathing or plastering.

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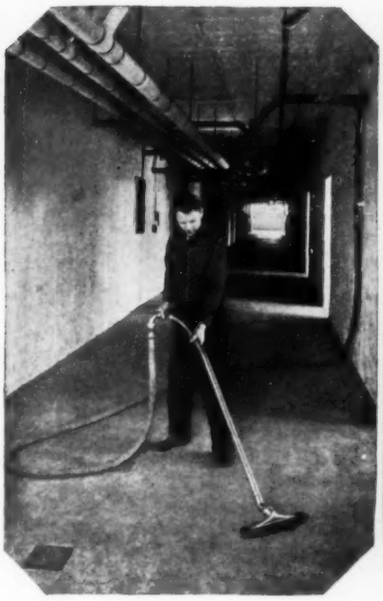

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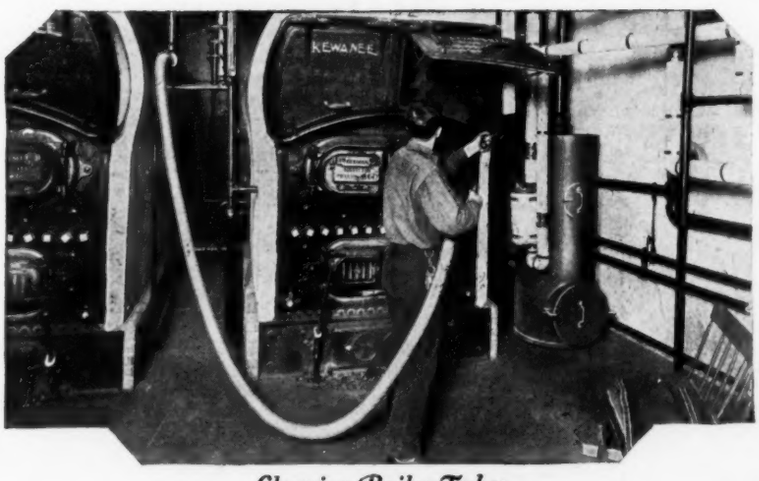
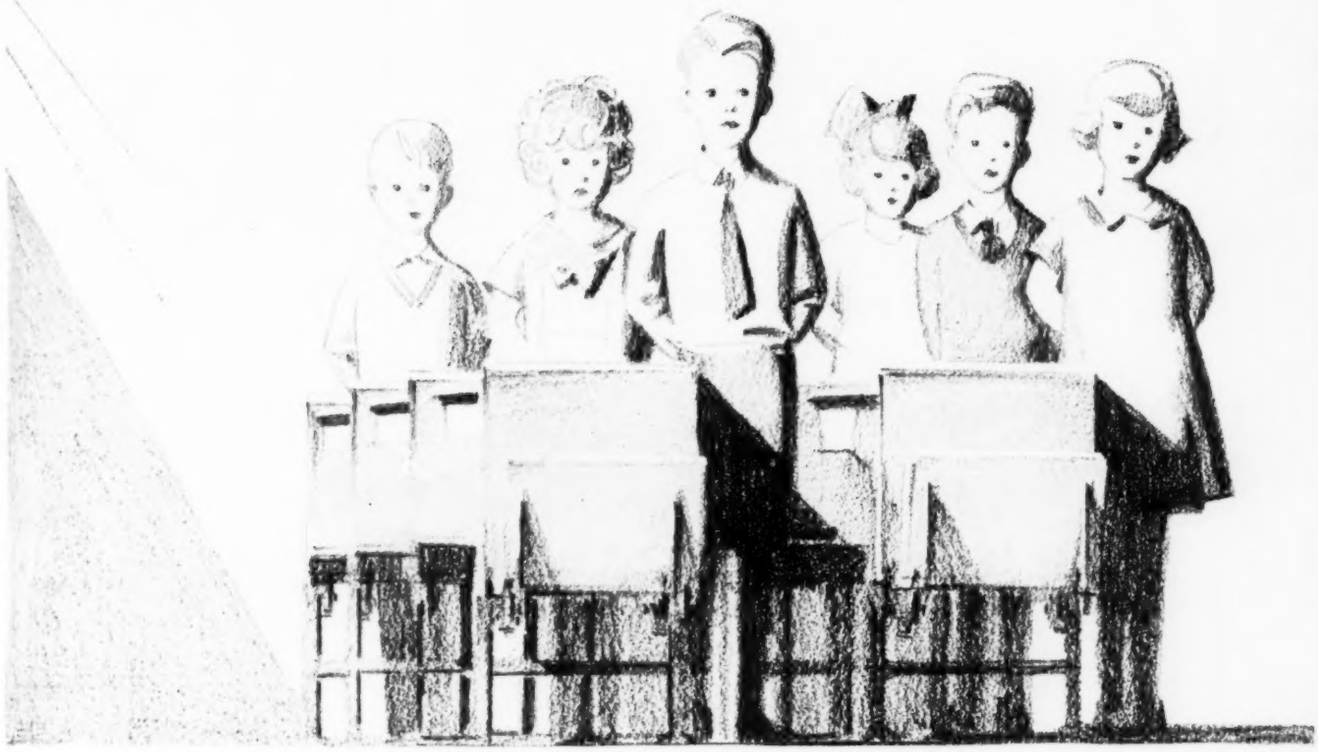


Cleaning Boiler Tubes

DON'T LET SUNLIGHT PLAY HOOKEY



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Warehouses in Every Principal City of the United States

"Favorable comments from everyone . . ."

says this Interior Decorator

For interiors at the Warwick, fine apartment hotel of Houston, Texas, almost 200 gallons of Barreled Sunlight were used

Walter J. Daly
Interior Decorator
Wall Paper, Draperies, Antique Furniture & Art Goods
Houston, San Antonio, Chicago
Houston
2812 Caroline Phone P. 7140 Houston

September 25, 1928

U. S. Gutta Percha Paint Co.,
Providence, Rhode Island

Gentlemen:

Believing that credit should be given where it is due, I am writing to tell you about the fine results I have obtained in the execution of my contract covering the painting and decorating of the Warwick Apartment Hotel with Barreled Sunlight.

About 185 or 200 gallons of Barreled Sunlight were used and the result has caused favorable comments from everyone who has seen the job. Barreled Sunlight is sure a wonderful product for use on any interior where a durable, washable finish is desired. I have tried numerous products which have been represented to be of a similar construction but have found that Barreled Sunlight beats them all.

The covering and working properties are far superior to competitive brands; it flows freely under the brush, it tints beautifully and the finish has a distinctive appearance that is always acceptable to owner and architect alike.

Yours very truly,
Walter J. Daly
WALTER J. DALY

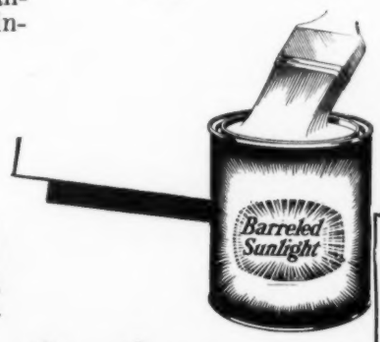
WJD:k

WITH a smoothness of texture and a richness of depth equalled only by more expensive enamels . . . Moderate in first cost. . . Economical in maintenance . . . Barreled Sunlight is employed for fine interior painting by an ever-growing number of schools.

When used in the pure white Barreled Sunlight is guaranteed to remain white longer than any gloss paint or enamel, domestic or foreign, applied under the same conditions.

In Full Gloss, Semi-Gloss and Flat. Drums and cans. Easy to tint. For priming use Barreled Sunlight Undercoat.

U. S. Gutta Percha Paint Co., 47-A Dudley Street, Providence, R. I. Branches: New York — Chicago — San Francisco. Distributors in all principal cities.



Barreled Sunlight

Reg. U. S. Pat. Off.

U. S. GUTTA PERCHA PAINT CO.
47-H Dudley Street, Providence, R. I.

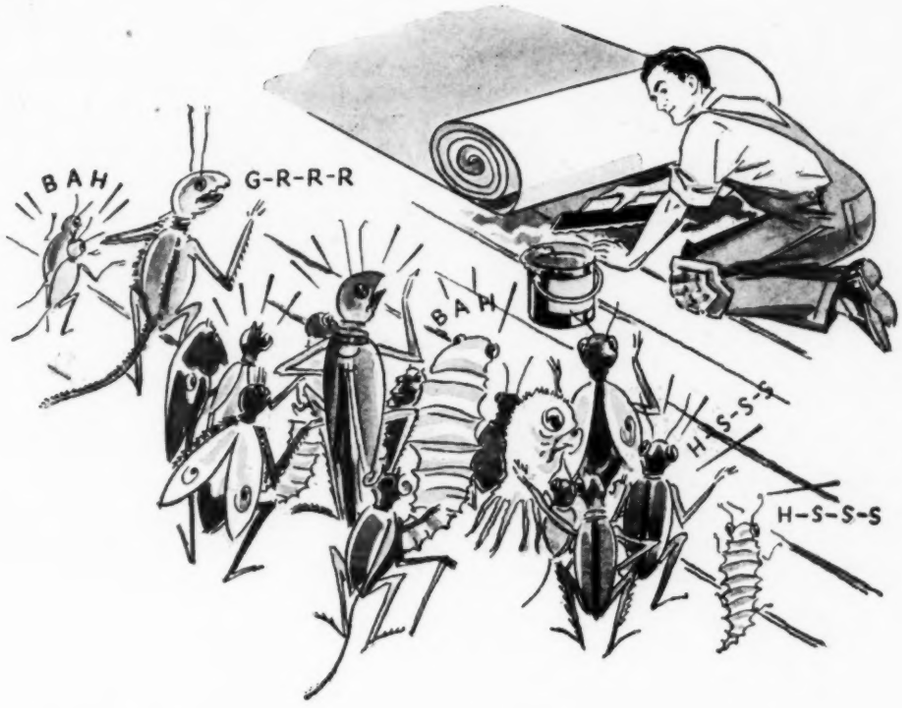
Please send me your booklet, "Interiors of Lasting Whiteness," and a panel painted with Barreled Sunlight. I am interested in the finish checked here.

Gloss ( ) Semi-Gloss ( ) Flat ( )

Name _____

Street _____

City _____ State _____



Hisses and Catcalls
greeted the Linoleum-Layers

It all began five or six years ago when the local hospital suddenly went modern and the microbes who had dwelt there for generations awakened one morning to discover workmen covering the antiquated floors with a material which the more erudite microbes said was W. & J. Sloane Linoleum.

Their dwelling places in the floor cracks covered up, the colony was compelled to seek another home. They chose the city hall. But their sojourn there was short-lived for the city hall soon also went modern and the self-same W. & J. Sloane Linoleum-Layers forced another microbial migration, this time to the local school building.

"Here at last" the microbes sighed with relief, "we can live unmolested." But within a few months there appeared on the scene the familiar and much-hated linoleum-layers. Small wonder that their arrival was greeted with hisses and catcalls. For the school building was the microbes' last stand.

One of the surest ways to make a school building unpopular with germs is to cover its floors with W. & J. Sloane Linoleum. Extra grinding of ingredients plus 32% extra pressure in the calender rolls gives W. & J. Sloane Linoleum a smooth, uniform surface without cracks and crevices.

This extra processing not only makes a more sanitary floor but also decreases maintenance cost.

School officers and members of school boards will find information of value in our book: "How Linoleum is Made in the W. & J. Sloane Plant." We will gladly send you a copy on request. W. & J. Sloane Mfg. Co., Trenton, New Jersey.

This book will show you why floors of W. & J. Sloane Linoleum are sanitary. Write for free copy. Advertising Department, W. & J. Sloane, 577 Fifth Avenue, New York City.

W. & J. SLOANE LINOLEUM

"Quality leaves its imprint"

FOLDER-WAY utilizes idle floor space

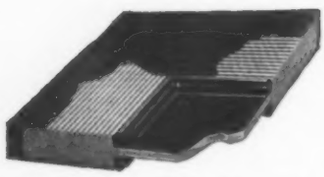
Several small rooms quickly converted into one large assembly hall

Additional space for extra large gatherings is a frequent and urgent need in churches, community centers, auditoriums, lodge halls and clubs. But the cost of idle floor space prevents reserving a room exclusively for such occasions. Several smaller rooms must be thrown into a single large assembly hall.

This problem is adequately met by R-W FoldeR-Way partition door equipment, engineered to fill any and all requirements.

Rapid, noiseless operation of the doors was an essential feature specified by the architect of the Denver Y.W.C.A. FoldeR-Way filled the bill with complete satisfaction, as illustrated. Perfect alignment and smooth, silent, easy moving, trouble-free operation are assured by FoldeR-Way.

Write for R-W Catalog No. 43.



R-W Compound Key Veneered Doors have laminated stile and rail core construction. Extra heavy sawed veneer is applied by the exclusive tongue and groove method. The result is a combination of beauty and sturdiness that lasts for decades, free from warping, swelling, shrinking, etc.

Richards-Wilcox Mfg. Co.

A Hanger for any Door that Slides

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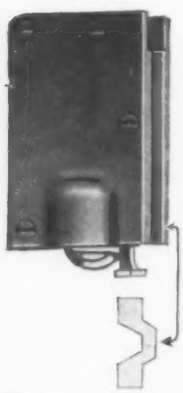


Bottom roller for FoldeR-Way doors, beautiful brass finish or dull black.

From $87.50
to $950.00

A right size FINNELL to polish and scrub your floors at a saving in time and money

FOR painting a billboard a six inch paint brush may be most effective. For painting a sunset on canvas, the finest of camel's-hair brushes may not be too small. The purpose determines the size.

It is so in floor maintenance. One school building has four rooms—another fifty, including large assembly, gymnasium, etc. One has tile corridors—another linoleum. One has stationary desks—another removable. One cleans every day—another twice a week. No one floor machine can fit *all* needs.

FINNELL No. 15
4 Brushes—
230 RPM
Weight 50 pounds

FINNELL meets this problem, not with one scrubber polisher or just two—but *eight!* From the large No. 20

HOUSEHOLD
FINNELL
2 Brushes—
400 RPM
Weight 21
pounds

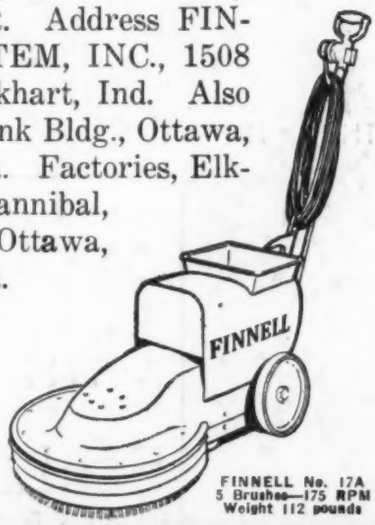
Let us make a survey of your floors, and then out of our quarter century of experience recommend the *system* which will give you best results.

If you cannot use a FINNELL System with satisfaction and profit, we do not want you to have one. If you can—you want to have one. The survey will tell—no obligation incurred by requesting it. Address FINNELL SYSTEM, INC., 1508 East St., Elkhart, Ind. Also Standard Bank Bldg., Ottawa, Ont., Canada. Factories, Elkhart, Ind., Hannibal, Mo., and Ottawa, Ont., Canada.

It polishes

It scrubs

It waxes



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5 Brushes—175 RPM
Weight 112 pounds

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